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UNIVERSITY OF ALBERTA

The Burning North:
a History of Fire and Fire Protection in the Northwest Territories

by

Sidney Stephen Janzen

A THESIS
SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS OF ART

DEPARTMENT OF HISTORY

EDMONTON, ALBERTA
Spring, 1990

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled "The Burning North: a History of Fire and Fire Protection in the Northwest Territories" submitted by Sidney Stephen Janzen in partial fulfilment of the requirements for the degree of Master of Arts in History.

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Ken Munro
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D. J. Hall
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Date: December 14, 1989

In loving memory of my parents,

John and Sidney Janzen

ABSTRACT

Fire has played an important role in the boreal forest of the Northwest Territories. For thousands of years it has lent shape to the region's mosaic of flora and fauna. Predating man by at least a few millennia, wildfire was critical in determining the forest habitats that greeted the first immigrants to the Mackenzie region. Until man's arrival, the frequency and pattern of wildfire depended solely on lightning. With the coming of the earliest prehistoric population, a new source of ignition entered the northern forests. Moreover, man's presence in the North's fire environment meant that his activities were, to a large degree, determined by fire. This study focuses on the dynamic relationship northern peoples have had with fire since the prehistoric period, but concentrates on the evolution of fire control efforts in the Northwest Territories during this century.

It is clear that by applying fire to the landscape, early nomadic man was able to manipulate the surrounding forest habitat. At the turn of the last century, these traditional fire practices gave way to the European ideals expressed by the Canadian government. From 1900 to 1920, the rise of professional forestry and the conservation movement accelerated the government's attempts to limit fire occurrence beyond the settled regions. Ottawa's commitment to fire prevention and protection waned during the interwar years, effectively stalling the delivery of such services to federal lands for another three decades. A large-scale development boom in the North during the postwar period produced a wave of man-caused fires. After 1950, the federal government felt it necessary to take a more

authoritative approach to land management in the territories. As a result, a relatively advanced fire program was established in the Mackenzie District. The size, diversity, and population of the Northwest Territories, presented the program with a wide range of unique problems. In 1987, the federal government transferred the fire program to the Government of the Northwest Territories.

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While difficult to credit all the people who have helped me with this thesis, it would be impossible not to cite a few individuals. I want particularly to thank my supportive siblings: Ruth, John, David, and their most entertaining families. I also must thank a great group of friends, and especially my Helitack peers, whose unstinting dedication to safety and humour kept me alive over the course of seven—often slow—fire seasons.

Most strongly I want to express my gratitude to the many who challenged and encouraged me while I attended the University of Alberta: especially Brian McKercher, who provided an early prod and some patience, and Professors Stuart Mackinnon and Peter J. Murphy, who continued to do so over the course of the last two years. A very special thanks must go to Rick Lanoville at the GNWT Fire Centre, who initiated the project, secured the necessary funds, and introduced me to the friendly community of Fort Smith; and Walter Moore who made me feel welcome in Ottawa.

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ABBREVIATIONS

CFA	Canadian Forestry Association
CFS	Canadian Forestry Service
DFB	Dominion Forestry Branch
DFS	Dominion Forestry Service
DIAND	Department of Indian Affairs and Northern Development
FAZ	Fire Attack Zone
FTS	Forest Technology School
GNWT	Government of the Northwest Territories
HBC	Hudson's Bay Company
HTA	Hunters and Trapper's Association
LPFD	Lands, Parks and Forests Branch
NLFS	Northwest Lands and Forest Service
NWC	Northwest Company
NWMP	North-West Mounted Police
NWT	Northwest Territories
NYB	Northwest Territories and Yukon Branch
OBZ	Observation Zone

PROLOGUE

> If we go back far enough, we find that the first acts of civilization were the use of tools, the gaining control over fire and the construction of dwellings. Among these the control over fire stands out as a quite extraordinary and unexampled achievement. . . . —Sigmund Freud[1]

> Fire policies and programs are outcroppings of deeper cultural history. They are also expressions of a boreal environment with which, I suspect, Canadians have had a difficult but expressive relationship. —Stephen Pyne[2]

Fires burn in the forests of Canada with unrelenting regularity. Almost every summer, in some region of the country, spectacular conflagrations are brought to the public's attention. As a result, most Canadians have grown to recognize fire as simply another telltale sign of their country's seasonal rhythms. This acceptance of fire is a rather recent phenomenon, and is a direct result of man's increasing distance from the untamed wilderness. The settlement and urbanization of the greater part of society has all but ended most people's close interaction with the forest environment, and the fires that periodically burn there. For the majority of contemporary society, the only relationship they will ever have with fire is one now maintained by the media.

This has not always been the case. Prior to the coming of fire protection and large-scale settlement during the nineteenth century, any knowledge Canadians had about forest fires was more than likely gained by firsthand experience. Explorers, fur traders, early settlers, and of course, the hunters and gatherers before them, were all forced to coexist with fire in a much more intimate manner than most of us today. The relationship each respective group came to have with fire varied, but the basic characteristics of each relationship entailed either fleeing from fire, applying fire, or combatting fire.

This study primarily concerns itself with the latter characteristic as expressed by the evolution of fire protection in Canada's northernmost forests, and more specifically, the forests of the NWT. Organized fire protection was a relative latecomer to the NWT, and as such, provides an excellent opportunity to view the changing relationship of man and fire over a compressed time period. An "official" history of the NWT's fire program—which this study does not purport to be—would simply examine Ottawa's administration of the NWT's forests since about the turn of this century. Although the last three chapters of this study focus on the federal government's efforts to deal with the problem of fire in the NWT, the discussion begins with some background on the interaction of fire and man long before close government involvement. It is hoped that by viewing man's dynamic role in the northern forests over a broad sweep of time, a better understanding might be gained of man's place within that environment.

There is also an important secondary theme at work within this examination of fire and fire protection in the NWT. The management of far-flung regions and the resources they contain has typically been one of the Canadian government's most challenging preoccupations. Even given the rise of provincial responsibility and control of resources in this century, the federal government has had a long history of trying to implement a civilizing force in vast regions, thousands of miles away from Ottawa. The story of fire protection in the NWT is an extreme but illuminating example of this central function of Canada's federal authorities. Therefore, while the pages which follow are devoted mostly to a chronology of man's relationship with fire in the NWT, and the evolution of fire programs and policies, they also attempt to provide a larger picture of Ottawa's stewardship of the nation's forestlands.

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[1] Sigmund Freud, *Civilization and Its Discontents*, trans. James Strachey (New York: W.W. Norton & Company, 1961), p. 37.

[2] Personal communication with author, 27 January 1989.

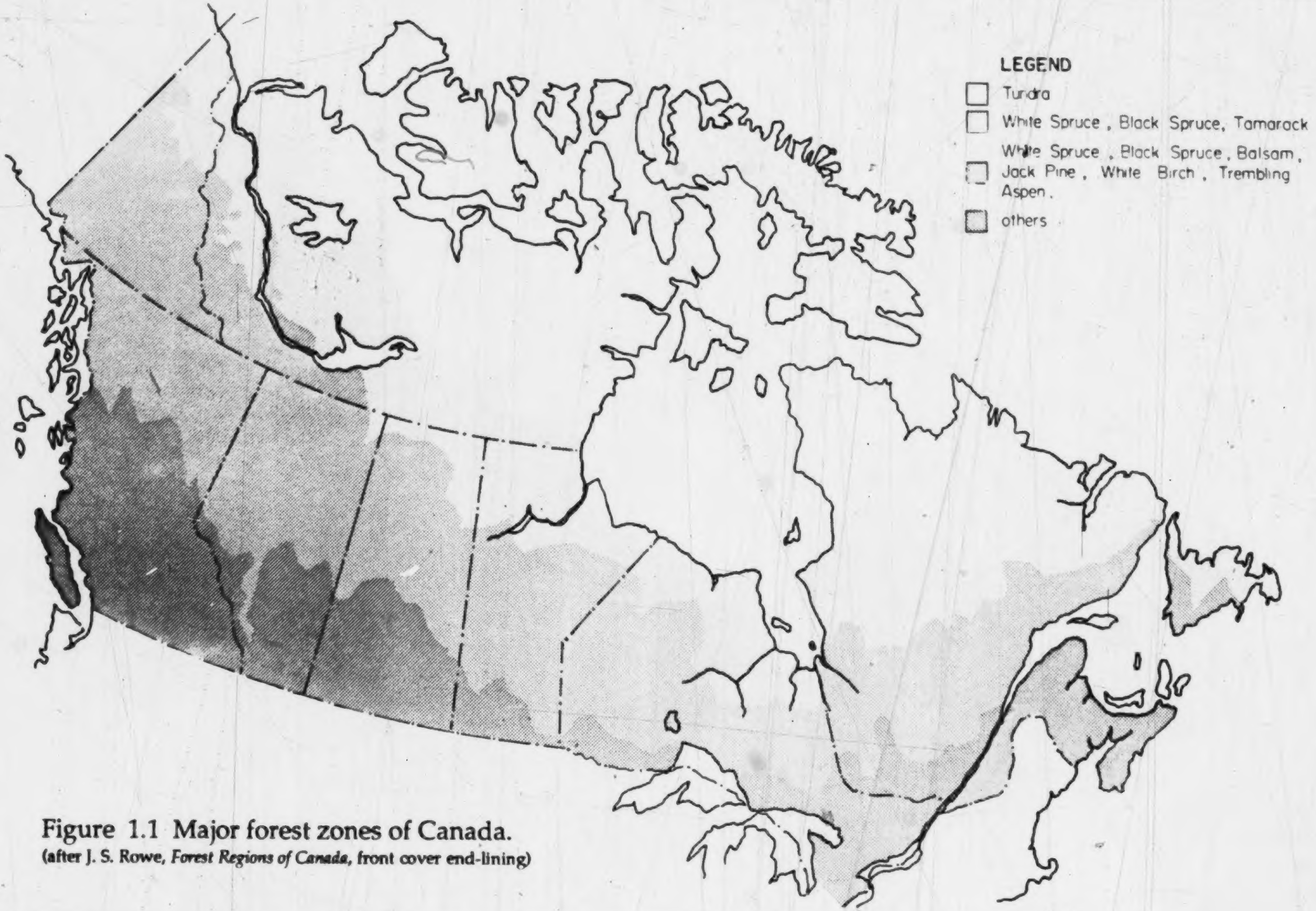
LEGEND
☐ Tundra
☐ White Spruce , Black Spruce, Tamarack
☐ White Spruce , Black Spruce , Balsam , Jack Pine , White Birch , Trembling Aspen .
▨ others

Figure 1.1 Major forest zones of Canada.
(after J. S. Rowe, *Forest Regions of Canada*, front cover end-lining)

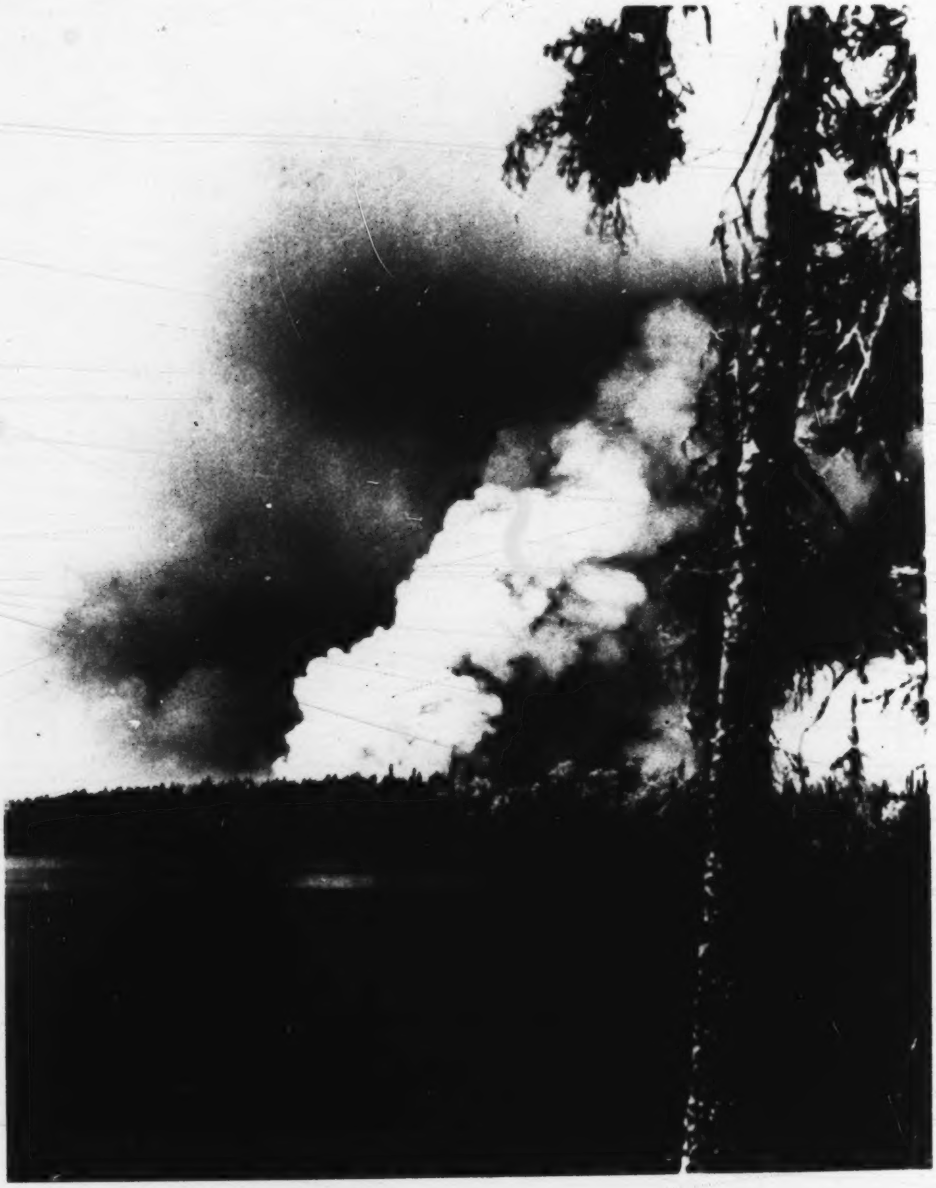

Figure 1.2. Woods on fire in the Canadian North. (n. doc.)

CHAPTER 1

Distant Fires: A Fire History of the North from Prehistory to the Period of European Contact

> In a study of nature, one of the first prerequisites is to attempt to discover and understand the interrelationships of plants and animals and their environment before these were manipulated by man.—E. V. Komarek[1].
>
> For thousands of years the area has been occupied by scattered human populations who understood and managed the taiga for survival.—R. W. Wein[2]

A historical study of fire and forest protection in the Northwest Territories (NWT) is not easily reconciled with a specific timescale. Though the development of official fire control policy can itself be set within a chronology, the occurrence of wildfire cannot. The history of fire in forested regions certainly predates mankind. Fire is reflected well in the Earth's geologic record, with fossils attesting to its presence over 400 million years ago.[3] The relationship between fire and the forest habitat of northern Canada was entrenched long before humans appeared. Early northern man, however, existed in a habitat that owed much of its character to recurrent and large-scale forest fires. In a sense then, the story of fire's influence on man begins long before his arrival. An understanding of fire's traditional place in the boreal forest is necessary before the subtle complexities of the human effort to confront and control it can be appreciated. A cursory investigation of fire's prehistory provides the perspective needed for any discussion of fire and man in this century.

Recently, ecologists and those involved in land management have become increasingly interested in the evidence of historical fire. Reaching back beyond what is documented, scientists have probed the environment for telltale signs of wildfire. In the future, it is hoped that the results of their research will enable those entrusted with the conservation of forests to correctly decide on fire management policies that reflect, as closely as possible, the work of nature alone. Although studies of fire history have yet to profoundly influence forest management in the NWT, they can enrich a cultural review of fire and, in this case, assure that the natural and rightful place of fire in the northern ecosystem is better understood.

I

The term "fire history" is used by specialists to denote the record of forest fires in a particular locality. The value of this natural chronicle is not limited to its representation of individual fires, or fire seasons; it is more useful as a tool for laying bare the frequency and pattern of ignition in a fire environment, and discerning man's influence.[4] Fire history differs from general historical study in both scope and depth. Experts assembling a fire history for a region would be interested in human causation but would care little if fire occurrence had any sort of effect on human populations while, on the other hand, a historian might be more interested in the human element. The ability to assemble detailed fire histories for the varied forest environments of the NWT is years away. Numerous fields of study must be consulted before a faithful chronology of fire can be assembled. Geological data, the botanical investigation of pollen grain and plant spore remnants, analysis of annual tree rings, forest inventories, photographs and written documents, can all provide clues to a region's fire history.[5] Although advanced research has yet to provide the requisite data, some conclusions can be reached about fire in the taiga's past.[6] The use of fire history within the body of this discussion on forest protection policy will help to describe the forests of the NWT in the prehistoric and contact periods—a time predating effective governmental influence, but an age less than pristine.

Recalling botanical studies he had made in the NWT during the late 1920s, Harvard University's eminent professor Dr. Hugh Raup deemed the northern coniferous forests "notoriously flammable."[7] While noting the "effects of fire everywhere," he admittedly failed to see its "broader meaning."[8] Raup can be forgiven. Like countless other scientists drawn to the North in this century, he attempted to understand the extent to which the region's natural history was interwoven with periodic wildfire. Fire, one of the strongest dynamics at work on the boreal forest, is surely the most dramatic. Flames have been partly responsible for the pattern of northern vegetation from Alaska to Newfoundland (Figure 1.1). In determining the natural habitat, fire has also directed the activities of man.

Analysis of the untouched natural world is essential before man's influence on the environment can be correctly gauged. In the case of northern wildfire, one has to rely strictly upon the geologic record, for humans existed in this part of the New World long before the last period of deglaciation and have been placed in Alaska 40,000 to 50,000 years ago[9]. Consequently, it is difficult to separate man from the forests of the circumpolar region with any certainty, and impossible to determine what effect the earliest populations might have had on their surroundings. In fact, the area was probably on the fringe of habitation, supporting only a small and thin population of hunters. When one considers that the population of the NWT in 1905 was about

6500—a density of approximately one person for every five hundred square kilometres—it seems hard to imagine man having a substantial environmental effect.[10] However, with fire in hand, early man could very well have profoundly influenced the original pattern of ignition shaped by lightning.

The original frequency and pattern of lightning fires is a mystery as well. We do know that the history of wildfire in the northern boreal forest reaches back thousands of years and certainly predates man. The evidence of fire history before the coming of man is derived from advanced geologic research that has yet to be applied to the western sub-arctic. However, in many other areas of the Earth, geologists have located inorganic evidence of lightning ignition and "fossil fires."[11] Again, findings in Alaska point toward some possible suppositions applicable to the neighbouring inland areas. E. V. Komarek, a fire ecologist, noted the mixture of specific environmental factors that shaped Alaska's pristine biological communities. Temperature, humidity, soils, and other environmental dynamics gave rise to what he described as an ever-evolving mosaic of plant and animal communities and upon "this pattern was another mosaic caused or created by lightning fires."[12] The biological communities to which Komarek referred are not unlike those of the entire boreal forest and are very similar to plant communities in the NWT. In these areas the plants have adapted well to fire and in doing so reflect the historic regularity of fire. This is not a recent discovery. In the 1880s the roving geologist Robert Bell wrote about the "fires which have in turn swept over every part of this enormous country . . . again and again . . . ."[13] Though he did cite "spontaneous combustion due to the decomposition of pyrites," Bell quite correctly stated that lightning was the main source of ignition.[14] Consequently, the conifers that make up the boreal forest have evolved adaptations over the millennia to deal with fire and, in fact, establish themselves more readily on sites that have previously burned-over. Even today well over 80 per cent of all fires in the NWT are a result of lightning strikes. Though a variable of climatic fluctuation, lightning was certainly at work on the forests of the Mackenzie region for a very long time.

Archaeological evidence found in the Yukon, although constantly reinterpreted, indicates that man has inhabited the region for at least the last 9,000 years of the present post-glacial period.[15] Like the fire history in the previous inter-stadial period, it is improbable that man disrupted the natural fire regime to any great extent. That is not to say that man was averse to using fire. Early explorers' accounts offer ample proof that anthropogenic fire did have its place in the Mackenzie region[16]. Before citing documentation relevant to man's early influence on and use of fire ecology, the value of other sources pertaining to fire history in the NWT will be pursued.

Investigation into fire history in the boreal region has revealed some factual data relevant to this post-glacial period. Advanced scientific techniques have allowed researchers to reconstruct the prehistoric fire record. Sediment cores taken from northern bogs and lakes reveal charcoal fragments among the layers of pollen which reflects vegetative decomposition through time. Such analysis of fossil pollen content, or "palynology," was used in tandem with carbon-dating to prove the presence of fire in the Mackenzie District as early as 3100 B.C.[17] To date, extensive studies utilizing these sedimentary samples have not been undertaken in the North, but the general trend laid bare by this technique in other parts of North America suggests that fire has played a dominant role in determining the pattern of coniferous forests for 10,000-12,000 years. One estimate suggests that every square mile within the NWT's tree line has been visited by fire at least 100 times since the departure of the last ice age 10,000 years ago.[18] Moreover, early investigations tend to support the view that fire frequency in the northwest has increased within the last 2000 years. Some have suggested that the higher frequencies are the result of a shift in aboriginal hunting patterns.[19]

It is possible that this investigative line of research will, in the future, give a more comprehensive and conclusive view of the long term history of wildfire in the North. Enormous strides were made in this area within the last few decades. In this field, scientific data are very capable of aiding those interested in cultural history. M. L. Heinselman, a pioneer of fire history, summed up the important question to be asked in such research:

> How much fire was natural, and were there changes associated with the buildup of human populations, with the arrival of white men, and with post-glacial climatic fluctuations?[20]

The perfection of scientific techniques such as pollen/fossil dating combined with a more extensive study of northern archaeology could yield a more conclusive date as to when man first used fire in the North. Without such knowledge, a historian is unable to delineate the moment that fire in the pristine forest became fire the cultural event. Even before man could independently make fire, it was being carefully maintained and utilized after natural ignition. No matter how limited the effect, fire in the hands of man surely altered the pattern of forest fires.

Frequent fire shaped the northern boreal forests, enabling the production of food, fuel, and the wildlife primitive society needed, but without anthropogenic fire the environment was uninhabitable.[21] Flames have always been necessary to provide warmth in areas of winter cold. Primitive societies built fires and in turn produced artificial climates for their habitations "from England to northern China."[22] To eke out an existence in the sub-arctic forest, people have always relied upon fire. While perhaps its use in northern climes would not have been a necessity in the last inter-stadial period, one can hardly imagine a post-glacial climatic fluctuation that would have allowed people in more recent ages to exist without fire.

Conclusions regarding the relationship between natural fire and ancient culture are difficult to gauge unless something more is known about this prehistoric period. Whether the arrival of humans in the taiga greatly affected fire frequency and size is a question whose answer is dependent upon advances being made in both the science of fire history and the study of primitive peoples. Until such advances are made, explaining the earliest interaction in the North between fire, forest, and man is best left to more traditional sources.

II

Better evidence supporting the tenet that man has traditionally played a dynamic role in the northern boreal forest is found in the accounts of explorers, missionaries, fur traders, prospectors, and surveyors. Contact with these foreigners slowly changed aboriginal people's perception of the forest. The stream of newcomers transformed the native people's accommodation with their environment after centuries had passed without an appreciable change in their ecosystem.[23] The arrival of explorers and fur traders heralded a slow but inexorable shift in nature's balance. Indians became increasingly aware of the different values their northern hinterlands held for explorers and fur traders. An established northern fur trade in the late nineteenth century redefined the forested region. No longer were forests simply a storehouse of essentials for inhabitants; the woodlands of Canada held a wealth of exportable furs which dramatically changed how nature and man would interact. Consequently, the Indians' prehistoric relationship with fire, both applied and wild, was altered by the trade in fur. Peter Murphy recounted that the introduction of trade diverted the energies of many Indians to trapping and "may have resulted in increased attention to maintaining particular habitats" within the boreal forest.[24] Anthropological studies support the contention that fire-maintained areas were "an important feature of hunting-gathering-trapping technologies in the Canadian north."[25] Moreover, the effect the fur trade had on Indians' relationship with their environment indicates neither a beginning nor end in what is certainly a long history of varied interactions. Not unlike the fur trade, protection policies in the twentieth century mark only another step towards affecting this relationship. Admittedly, early alterations in man's perspective are difficult to quantify, but some conclusions can be reached. In fact, the contact era can effectively anchor the cultural history of fire in the NWT.

Any reconstruction of history in the North relies heavily on the observations of early explorers. A handful of studies by foresters, anthropologists, and historians have delved into these records to show the link between man and boreal fire.[26] Much of the work is devoted to the topic of traditional burning by Indians and, more generally, man as a causal factor in unintended fire. In the 1950s, Harold J. Lutz, a professor of silviculture at Yale, made the first exhaustive study of man as an agent of fire in the boreal forest. Though only a part of a full-scale investigation of wildfire in Alaska, one of Lutz's aims was to stress the destructive nature of fire in the hands of careless people. Recognizing lightning as an important cause of fire, Lutz went on to claim that "man, both aboriginal and white, has been an even more prolific source."[27] More recently, another respected professor of forestry has offered a more complete view of man and fire in the northwest. Unwilling to accept man as simply careless with fire, Peter J. Murphy considers Indian and Metis burning practices in his history of forest protection policy in Alberta.[28] The fact that two scholarly foresters would take rather divergent approaches to Indian burning can be largely attributed to intervening investigations by anthropologists. Interpretation of early references to fire in light of the conclusions offered by contemporary ethnologists emphasizes the changing nature of this historiographical interplay. While interest in human ecology was fixed upon man's reaction to the environment, some anthropologists sought to investigate man's reciprocal effect on his environment.[29] Man's reciprocal effect on the boreal forests is today best symbolized by modern protection policy. Prior to the twentieth century, man's effect was more Promethean in nature.

It is safe to suppose that fire and prehistoric culture interacted similarly throughout Canada's taiga. Ethnographic study has made strong cross cultural comparisons of pyrotechnology utilized at opposite ends of the Earth.[30] Canadian anthropologists Henry Lewis and Theresa Ferguson have paralleled the fire practices of North American Indians and Australian Aborigines. That cultures so distant would manipulate their environment in a like manner should not be too surprising. Fire was the first powerful tool man could wield to alter his habitat. Today there is general acceptance that hunter-gatherers across North American and around the world assumed the role of "fire manager" long ago. Across the globe similar burning "patterns are (or were) maintained in a variety of environmental settings and by culturally unrelated groups of hunter-gatherers . . . in areas of resource scarcity."[31] One area of resource scarcity not overlooked by ethnographers is the northern boreal forest, where traditional accounts of man-caused fire springing from the era of exploration are best interpreted with an eye on relevant ethnological data.

The most conclusive historical reconstruction of native burning practices in the boreal forest was undertaken by Lewis and Ferguson near the NWT, in northwestern Alberta.[32] Interviews with elder Indians enabled them to discern the traditional burning patterns that had ended with the arrival of protection policy in this century. Early Indians in the area commonly utilized fire to create meadows and other habitats frequented by game. Later, adapting to the needs of the evolving fur trade, productive trapping habitats near sloughs and streams were maintained by applied fire. Techniques employed by the Indians normally assured a controlled, predictable fire. Local weather conditions would be monitored and much of the burning would be carried out in the spring when snow still lay upon the forest floor. By firing an area, the natives of the boreal forest could influence the local availability of various forest resources while distancing themselves from the whims of mother nature. Natural fire was an enemy of sorts—a large fire could effectively destroy a forested region's ability to sustain people thereby making it necessary to move elsewhere. In fact, Lewis found evidence that Indians would set decadent forests afire so as to reduce the dangers of natural fire running unexpectedly through explosive fuels. Other common motives for burning included making trails and procuring firewood. Not attempting to "create or recreate an 'Ecologically Noble Savage,' " Lewis stressed that Indian controlled burning "was simply part of a sound strategy for adaptation in a northern boreal forest."[33]

Insight into how fire and man interacted helps underscore the dichotomy between the ways in which Europeans and Indians adapted to wildfire. Exploration in the Canadian northwest lead to numerous references to fire, both natural and anthropogenic. But Europeans probing the northern frontier brought their cultural baggage with them. Thus, an explorer's description suggesting that northern Indians were careless with fire says as much about the observer as the observed. Their typically melancholy reaction to fire during the contact era was shaped by its less frequent occurrence in the settled homeland. To early European explorers fire was destructive and wasteful but, as they discovered, fire was also necessary. Through shrouds of bias, the observations of early Europeans still clearly substantiate man as an important historical cause of fire. In applying fire to the landscape as Indians did, early Europeans also ratified the first unofficial "fire management" policy. In the American West, Stephen Pyne recognized that frontiersmen adopted Indian fire practices: "It was from the Indian—into whose fire environment they moved—that the European . . . learned basic survival skills."[34] And so it was on the Canadian frontier. In fact, without the widespread use of fire, exploration in Canada's North would have been a much slower and more difficult undertaking.

Deciding what historical data are most applicable to the NWT is difficult. Just as today's policy issues are better understood when related to other jurisdictions, so is fire in the age of the explorer. After all, fire in the forest was, and is, a world-wide phenomenon. As such it fits nicely within the framework of a comparative study; fire the global event interacted with people in some common ways, and given that applied fire was a pan-Indian practice, references from outside the geographic NWT help rough out the early history of fire and man Canada's boreal forest.

Campfires were thought to be the most common cause of anthropogenic wildfire in the North. Though it is impossible to know how many conflagrations began as Indian campfires, Lutz declared that the proportion "must have been substantial."[35] That proportion took a sharp jump with the arrival of explorers in the boreal forest. Pyne shrewdly noted that a mobile population contributed greatly to the boreal forest's natural fire load: "Nomadism and fire" [were] "mutual causes and effects."[36] In 1861, Bernard Ross unwittingly laid bare this relationship when summarizing botanical and mineral products useful to Mackenzie River Indians. Ross concluded that "without fuel to warm them [the Indians] and without canoes to migrate, they would soon cease to exist."[37] Ross failed to mention that fuel and canoes were also necessary in keeping him and his fellow explorers warm and on the move.

Campfire as a cause of forest fires in the NWT went through a revolution of sorts in the nineteenth century. The expansion of the fur trade into the Mackenzie region and the consequent increase in mobility and traffic meant more campfires, and more campfires meant more forest fires. Not surprisingly, what limited evidence there is of man's carelessness with fire in the North tends to invoke images of pyromaniac Indians.[38] Emile Petitot, a French missionary, geologist, and ethnologist, who toured the Mackenzie region in the 1860s, seemed to think that every charred forest he came across was the result of "savage destruction."[39] After gloomily observing a forest near Great Bear Lake burnt by the "savage's carelessness," he commented that the Dene were "insane" to destroy their land in such a way.[40] Petitot's biases aside, he does indicate the effect man's need for fire and mobility could have:

> If drywood becomes scarce, the Indian does not hesitate a moment, he sacrifices beauty to necessity, by setting fire to the forest. The fire will spread over the land, will ravage the country for many leagues. Little cares he. 'What a beautiful country', he will cry some years after, 'it can be traversed without the branches putting out your eyes, and we have plenty to warm us for a long time.'[41]

In 1888, the surveyor Robert Bell took an entirely different view. He proclaimed that fires in northern Canada were becoming more frequent as the contact era progressed. Going to great lengths to dispel the notion of the careless Indian exemplified in Petitot's writings, Bell indicates that matches in the hands of wandering Europeans caused many fires:

> . . . [he] very often avails himself of this easy means to make a smudge to keep off the mosquitoes, to light his pipe, dropping the burning match, or to make a little fire in order to boil his kettle and refresh himself with a hot drink. The number of fire-setting travelers has greatly increased in comparatively recent times. These include fur traders, missionaries, surveyors, explorers, prospectors, & c. and, nearer to civilization, railway builders, common-road makers, lumbermen, bush-rangers, and settlers.[42]

The bulk of travelers mentioned by Bell had little effect on the forests of the Mackenzie region until the twentieth century but his point is insightful. The migrant cared little if his fire burned the forests of an area he would never pass through again. The boreal forest's breathtaking size curbed man's interest in making sure the fire was out. This particular side effect of Canadian geography afflicted Indian and European alike. Even ethnocentric Petitot could rationalize the burnt woods near Fort Franklin by asking what good it was for Indians to deprive themselves of fire in a region where forests were abundant, where wood was free, and where there was nothing to do but keep warm?[43] In this case Petitot was referring to the torching of forests for firewood. Burning large tracts of timber near habitations was certainly common and ensured that people had an adequate supply of dead, dry, clean-burning fuel. Moreover, with time many burnt snags would blow to the ground providing firewood that was both accessible and easily transported.

The most easily understood use of fire in the North was as a means of combatting insects. Lutz, who devoted sections of his historical work on fire causation in Alaska to insect pests, succinctly defended his interpretation: "The credibility of some of the accounts relating to the severity of the torture inflicted by mosquitoes is sometimes questioned, but only by those whose experience does not include at least one summer in the northern forests."[44] Residents of Alaska claimed that mosquitoes caused "more fires than any other one thing."[45] As Bell mentioned with regard to "fire-setting travelers," smudges did help "keep off" mosquitoes and, before the advent of special nettings and effective repellents, was the only natural means of relief besides gale force winds. Geologist Charles Camsell put the matter in proper perspective during a 1905 survey amongst myriads of mosquitoes in the Peel River area:

> They rose up in clouds with every step I took. I had no protection from these pests . . . and from time to time as I got tired I also became almost panicky. When I felt myself beginning to run I immediately pulled up and made a small fire so that I could get some relief in the smoke. I could easily imagine a man going off his head if he should have to endure such torture for any length of time.[46]

Signal fires were also necessary in the North and are well represented in the literature. One of the earliest references to anthropogenic fire is found in the journals of the explorer and fur trader Samuel Hearne. Returning to Prince of Wales's Fort in 1770 from an aborted journey across the barrenlands to Coppermine River, Hearne searched the southern horizon in vain for smoke signifying the presence of his messenger Keelshies :

> . . . though we saw many smokes, and spoke with several Indians on my return that year, . . . he and I missed each other

> on the barren ground, and I had not seen or heard of him since that time.[47]

Hearne is apparently one of the first northern explorers to have relied upon smoke as a means of locating someone in the NWT. Alexander Mackenzie's accounts of the same region twenty years later demonstrate that he too relied on fire for general information. In October of 1792, he notes the position of fires left burning on the banks of a river indicating that canoes belonging to his party "could not be far ahead."[48] Another incidence of fire along a river's edge, noted by Mackenzie in June, 1793, implicates Indians:

> When we had passed the last river we observed smoke rising from it, as if produced by fires that had been fresh lighted; I therefore concluded that there were natives on its banks ... We saw smoke rising in columns from many parts of the woods ....[49]

Whether these smokes were drifting up from contained campfires is not known. It is difficult to guess just how many such fires were set for purposes of communication. It seems clear that techniques were employed in signalling so as to distinguish the smoky communique from the ubiquitous campfire. The firing of moss and the torching of a single spruce tree would put up a characteristically dark column of smoke and their use is well documented.[50] Had signal smokes not differed, searching the vast forests for a particular individual would have been impossible. At any rate, that Mackenzie noticed how "fresh" the smoke was is a good indication of how familiar explorers became with fire in its various forms. Certainly, this particular utilization of fire was one of the most common.

John Franklin's narrative of his first northern experiences also offers insight into the use of signal fires and the various sizes they could assume. Travelling from Fort Chipewyan to the Coppermine River, Franklin's party of Indian guides often used signal fires. While making camp one August of Indian guides often used signal fires. While making camp one August evening the "Chief made a large fire to announce our situation to the hunters."[51] It is not surprising that at times these "large" signal fires would turn into sizable conflagrations. We learn that one week later, spotting a distant fire thought to be the work of the "Dog-ribbed tribe," Franklin's entourage responded in kind:

> A fire was made on the south side of the river to inform the chief of our arrival, which spreading before a strong wind, caught the whole wood, and we were completely enveloped in a cloud of smoke for the three following days.[52]

Later, a group of Franklin's men, returning to the Fort from the Coppermine, reported that they had "frequently made fires to apprize" others of their approach.[53] Obviously some care was taken with signal fires or such regular use would have left little unburned along well traveled routes. Sir George Back, Franklin's fellow arctic explorer, shared his belief in the merits of this early form of long distance communication. On a search mission east of the Mackenzie River in 1833-1835, he recorded a few instances in which signal fires were lit. In August 1833, as Back was proceeding north to the Coppermine River, he made his earliest mention of signal fires. Failing to meet his men he "raised a dense smoke, by firing the moss, to apprise them of my situation . . . A smoke seen to rise from behind the sand-hills announced, shortly afterwards, the approach of the men . . . ."[54] In June of 1834, Back was once again "firing the moss" to help his party regroup:

> As the Indians did not make their appearance by the following noon, the men were sent to light large fires with the moss, which by that time was dry on the neighbouring hills; a well-understood signal, which, if they were within sight, would immediately bring them in.[55]

While commanding a search party looking for Franklin in 1848-1849, Sir John Richardson also wrote some detailed accounts of signaling throughout the Mackenzie River region. In August 1848 he observed numerous "signal smokes, raised in succession" by Eskimos near Harrison Island which were "intended to spread the intelligence of strangers in the country . . . ."[56] While on the Coppermine River later that year, Richardson's party communicated with a camp of Indians:

> . . . we were not many minutes in sight before they signalled their position by raising a column of smoke. This was replied to by us as soon as we could strike a light and gather a few handfuls of moss; and our answer was immediately acknowledged by them with a fresh column.[57]

Fire had many other uses in the North's forests in the era prior to government involvement. "Gumming" holes in canoes was almost impossible without the use of fire. There is also evidence of fire being used during warfare, for hunting purposes, to provide entertainment, and to melt snow or thaw the ground so that people could forage for food. Fire was a tool of great flexibility. To some native northerners it even held divining powers. Near Fort Resolution, Caribou hunters are known to have built fires where trails forked—one fire close to one trail and a second near the other. After the fires had burnt down the hunters would choose the lucky trail by noting the pile of burnt remains which best resembled Caribou tracks.[58] In the hands of northern man, fire's utility was truly astounding; that it often blackened forests was not.

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[1] E. V. Komarek, "Principles of fire ecology and fire management in relation to the Alaskan environment," in C. W. Slaughter, R. Barney, and G. M. Hansen, eds., *Fire in the Northern Environment-A Symposium* (U. S. Department of Agriculture, Portland, 1971), p. 7

[2] R. W. Wein, "New Technologies in Studying and Managing the Taiga," in W. C. Wonders, ed., *Knowing the North: Reflections on Tradition, Technology and Science* (Occasional Publication No. 21, Edmonton, AB. : Boreal Institute for Northern Studies), p. 15

[3] Fossils buried in the coal beds produced during the Earth's Carboniferous period support this approximate date.

[4] Stephen Pyne, *Introduction to Wildland Fire: Fire Management in the United States* (New York: John Wiley & Sons, 1984), p. 225.

[5] Ibid., p. 225.

[6] Here, "taiga" refers to coniferous forest land between the tundra and the steppes of North America.

[7] Hugh M. Raup, *Forests in the Here and Now* (Missoula: Montana Forest and Conservation Experiment Station, 1981), p. 27.

[8] Ibid., p. 35.

[9] Carl O. Sauer, "Man's Dominance by Use of Fire," in *Geoscience and Man, Vol. X: Grasslands Ecology—A Symposium*,(1975), p. 6.

[10] This approximation of density is based on a total area for the NWT of over 3.3 million square kilometres. The population estimate itself is probably artificially low; certainly natives had been devestated by disease by this time, so this was not the 'normal' population level.

[11] Stephen Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Princeton: Princeton University Press, 1982), p. 10.

[12] E. V. Komarek Sr., "Principles of fire ecology and fire management in relation to the Alaskan environment," in *Fire in the Northern Environment: A Symposium* (Portland: U. S. Department of Agriculture, 1971), p. 14. The palynological technique has also been applied to northwestern Alberta in an attempt to chart more recent trends in the fire regime. Though the technique was found to be poor for small scale changes, it is an interesting application; see Theresa A. Ferguson, "Productivity and Predictability of Resource Yield: Aboriginal Controlled Burning in the Boreal Forest" (Unpublished Master of Arts Thesis, University of Alberta, 1979).

[13] Robert Bell, "Forest Fires in northern Canada," reprinted from the *Report of the Forestry Congress*, Atlanta Meeting, 1888, p. 1.

[14] Ibid., p. 1. While iron pyrites were used occasionaly as flints, natural fire occurring from their decomposition has not been recorded.

[15] The archaeological evidence continues to provoke controversy, but it does appear that direct ancestors of the earliest people inhabiting the Mackenzie Valley were living in the Yukon by 8,000 B.C. ; see K. S. Coates and William R. Morrison, *Land of the Midnight Sun: A History of the Yukon* (Edmonton: Hurtig Publishers, 1988), pp. 5-9.

[16] Anthropogenic fire refers to those lit by humans.

[17] William C. Noble, "The Tundra-Taiga Ecotone: Contributions from the the Great Slave-Great Bear Lake Region," in Scott Raymond and Peter Schledermann eds., *International Conference on the Prehistory and Paleoecology of Western North American and Subarctic* (The University of Calgary Archaeological Association, 1973), p.159.

[18] R. Bailey, "Managing Large Fires in the Northwest Territories," in D. E. Dube comp., *Proceedings of the Intermountain Fire Council 1983 Fire Management Workshop* (Edmonton: Northern Forest Research Centre, 1985), p. 41.

[19] For a summary of these early pollen/charcoal studies in the northwest see Charles Schweger, "Use of Lake Sediments for Reconstructing Prehistoric Fire Records," in *Fire ecology in resource management: Workshop Proceedings, Information Report NOR-X-210* (Edmonton: Northern Forest Research Centre), pp. 30-33.

[20] Miron L. Heinselman, "The natural role of fire in the northern conifer forests," in *Fire in the Northern Environment: A Symposium* (Portland: U. S. Department of Agriculture, 1971), p. 67.

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[21] Pyne, *Introduction to Wildfire*, p. 224.

[22] Sauer, "Man's Dominance," p. 1.

[23] Kenneth Coates, *Canada's Colonies: A History of the Yukon and Northwest Territories* (Toronto: James Lorimer, 1985), pp. 30-31.

[24] Peter J. Murphy, *History of Forest and Prairie Fire Control Policy in Alberta* (Edmonton: Alberta Energy and Natural Resources, 1985), p. 3. Murphy's view on the Indian use of fire springs from the ethno-historical data collected in northern Alberta by Henry T. Lewis and Theresa A. Ferguson. For an example of this approach see, Henry T. Lewis, "Maskuta: The Ecology of Indian Fires in Northern Alberta," *The Western Canadian Journal of Anthropology*, 7(1): pp. 15-56.

[25] Henry T. Lewis and Theresa Ferguson, "Yards, Corridors, and Mosaics: How to Burn a Boreal Forest," *Human Ecology*, Vol. 16, No. 1, 1988, p. 74.

[26] For studies most relevant to the Northwest Territories situation see Harold J. Lutz, *Aboriginal Man and White Man as Historical Causes of Fires in the Boreal Forest, with Particular Reference to Alaska*, Yale University: School of Forestry, Bulletin No. 65 (New Haven: Yale University, 1959). Murphy, *History of Forest and Prairie Fire Control*; Lewis, "Maskuta;" Ferguson, "Productivity and Predictability."

[27] Lutz, *Aboriginal Man and White Man*, p. 41.

[28] Murphy, *History of Forest and Prairie Control*, p. 1.

[29] Henry T. Lewis, *A Time for Burning, Occasional Paper No. 17*, (Edmonton: Boreal Institute for Northern Studies, 1982.) p. 4.

[30] See Lewis and Ferguson, "Yards, Corridors, and Mosaics."

[31] Ibid., p. 59.

[32] See Lewis, "Maskuta," and Ferguson, "Productivity and Predictability."

[33] Lewis, "Maskuta," p. 44., The bulk of the information provided here can be found in this article. It should be noted that a recent unpublished investigation of burning practices in northern Alberta was undertaken by Ferguson, "In Search of the Elusive: Traditional Native Prescribed Burning in the Northeastern Wood Buffalo National Park Area." (n.p.[discussion paper], 1988). Curiously, Ferguson found that the ethnographic data was much more difficult to obtain. Interviews in the Park revealed little more than the fact that Indians actively burned around settlement areas.

[34] Pyne, *Fire in America*, pp. 77-78.

[35] Lutz, *Aboriginal Man and White Man*, p. 4.

[36] Pyne, *Fire in America*, p. 499.

[37] Bernard Ross, "An account of the botanical and mineral products, useful to the Chipewyan Tribes of Indians, inhabiting the Mckenzie(sic) River District," *Canadian Naturalist and Geologist*, Vol. 6, (1861), p. 133.

[38] In fact, there is very little evidence of forest fires started for no apparent reason. There is an unsubstantiated claim made by Lutz that implicates only Europeans. "Incredible as it may be, white man is also known to have set the forest afire just to see it burn or "for fun," quoted from, *Aboriginal Man and White Man*, p. 42. The only mention in Lutz's exhaustive study of aboriginal man burning "just for fun," comes from the Yukon and can be found on p. 22.

[39] For example, see Petitot, *Geographie de l'Athabaskaw-Mackenzie et des grands lacs du bassin artique* (Paris: NA, 1873), p. 283.

[40] Petitot's exact words make his position clear. "Incendiee en 1868 par l'incurie des sauvages, la montagne de la Corne nous presenta l'aspect le plus lugubre. Il y a de l'insanite chez les Dene a ravager ainsi leur pays, en le deprivant bien inutilement de la seule chose qui puisse lui concilier un peu d'admiration: ses forets de sapins," *Exploration de la Region du Grand Lac des Ours* (Paris: Tequi, Libraire-Editeur, 1893), p. 314.

[41] Emile Petitot, *Monograph of the Dene-Dindjie Indians*, trans. Douglas Brymner, (Ottawa, n.d. [1878], p. 16.

[42] Bell, "Forest Fires in northern Canada," p. 3.

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[43] Petitot, *Exploration of the Region*, p. 76. A more recent reference to the necessity of firewood procurement can be found in David Merrill Smith, *Moose-Deer Island House People: A History of the Native People of Fort Resolution* (Ottawa: National Museums of Canada, 1982), p. 105. Smith noted that Rocher River people would choose a camp near a "good supply of dry wood" for smoking meat and keeping flies away.

[44] Lutz, *Aboriginal Man and White Man*, p. 18. It should be kept in mind that black flies, deer flies, and horseflies have always rivalled mosquitoes as the North's most annoying pests and were, consequently, responsible for many smudge fires.

[45] R. S. Kellogg, "The forests of Alaska," *Canadian Forestry Journal* 12:: pp. 777-780., as quoted in Lutz, *Aboriginal Man and White Man*, p. 19.

[46] Charles Camsell, *Son of the North* (Toronto: Ryerson Press, 1954), p. 189.

[47] Samuel Hearne, *A Journey from Prince of Wales's Fort in Hudson's Bay to the Northern Ocean* ([1795]; rpt. New York: N. Israel, Amsterdam and DaCapo Press, 1968), p. 100.

[48] Alexander Mackenzie, *Voyages in North America* (London: 1801), p. 124

[49] Ibid., pp. 232-233.

[50] References to the burning of standing trees in the North for signal purposes can be found in Lutz, pp. 6-9., and was also mentioned by photographer/historian Father Rene Fumoleau during an interview with the author. Indications are that moss and lichens were the signal fuels of choice, see Lutz, p. 10 and quotes from Captain George Back's expeditions cited below.

[51] John Franklin, *Narrative of a Journey to the Shore of the Polar Sea* (London: John Murray, 1823), p. 217.

[52] Ibid., pp. 221-222.

[53] This was reported to Franklin by a Mr. Wenzel, *Narrative of a Journey*, p. 492.

[54] (Captain) George Back, *Narrative of the Arctic Land Expedition, to the mouth of the Great Fish River* (Paris: Baudry's European Library, 1836), p. 74.

[55] Ibid., p. 144.

[56] John Richardson, *Arctic searching expedition: A journal of a boat-voyage through Ruperts Land and the Arctic Sea, in search of the discovery ships under command of Sir John Franklin* (New York: Harper and Brothers), p. 141.

[57] Ibid. pp. 198-199.

[58] Smith, *Moose-Deer Island House People*, p. 42. References to the use of fire in gumming canoes, in hunting, and for "fun," can be found in Lutz, *Aboriginal Man and White Man*. For examples of fire and foraging see Brad C. Hawkes, *Fire History and Management Study of Kluane National Park* (Victoria: Pacific Forest Research Centre, 1983), p. 43.

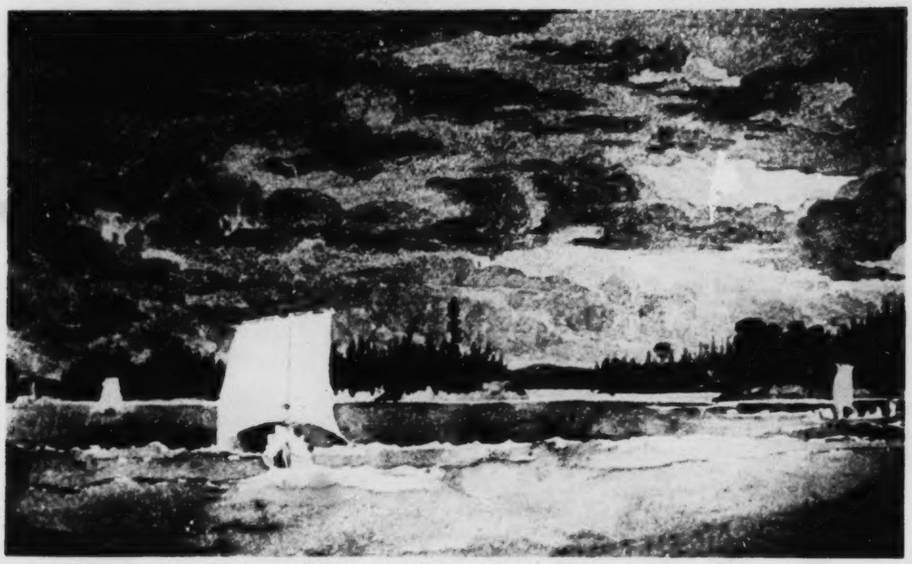

Figure 1.3. Smoke-filled sky over upper Mackenzie River as depicted by George Back, August 3, 1825. (NAC, PA-8953)

CHAPTER 2

Fire in the Early Northwest

> The New World's history has been largely the story of man's struggle with nature. . . . [it] has been the ever-present factor, the constant influence shaping the mentality and the conduct of every inhabitant. —A. R. M. Lower, 1938.[1]

> From a very extensive personal knowledge of the condition of the forests of Northern Canada, I am able to state that fires have become more and more frequent as we approach the present time.
> —Robert Bell, *Forest Fires in Northern Canada*, 1888[2].

When, on May 2, 1670, Charles II granted to the Hudson's Bay Company (HBC) a huge portion of North America known as Rupert's Land, a unique period of environmental change began in the northern boreal forest. There followed the slow penetration by commercial adventurers, and with this a rather different relationship between man and forest; in the lands north of 60 degrees latitude, subsequent forest protection policy was rooted in this process. In fact, the North's fire regime would undergo its first significant shift as the fur trade pushed into Rupert's Land and beyond. The fur trade brought more than a new economic system to isolated regions, it also affected fire incidence, especially along major transportation routes like the Athabasca, Peace, Slave and Mackenzie rivers. As we have seen, the new commercial pursuit promoted both carelessness with fire, and habitat management by fire. But these early shifts in the region's fire history reflect only the beginning of change in the forests of the northwest. English interests in the Hudson Bay and Mackenzie River drainage gave way to Dominion needs in the latter half of the nineteenth century. Government initiatives directed at the prairie frontier in the Laurier years began to have influence in the northern hinterland. By the turn of the twentieth century, as government surveyors plied the Mackenzie river and its environs to gauge the value of the far flung forests, embryonic protection regulations applied to the newly settled West were also haltingly implemented in the Mackenzie region.

I

The seizure of the northwest by the trading companies in the late 1700s was the greatest conquest of Canadian business in this era.[3] But this did not happen quickly. Over one hundred years separated the 1670 granting of Rupert's Land and the pushing back of its entire frontier by commerce. Taking advantage of already established trade centres around the Bay, the HBC was the first to investigate the commercial possibilities in parts of the Mackenzie region. Though they had made excursions north and west before, Samuel Hearne's "exploratory" loop with Matonabbee in 1770-1772, from the Bay to the Arctic Ocean and back via Great Slave Lake, was the first comprehensive survey. At the time, the HBC was not interested in greatly expanding its trade lines; they needed incentive from rivals before pushing northward.[4] The Montreal-based North West Company (NWC) provided the crucial impetus. In 1778 Peter Pond was lured into the rich Athabasca region after crossing the Methye Portage which links the Hudson Bay drainage basin with the larger western watershed drained ultimately by the Mackenzie River. Following Pond's "discovery," the NWC carried out extensive investigation of the new fur frontier. Alexander Mackenzie set out in 1789 to study the great rivers of the northwest and locate an economical water route that would enable efficient expansion of the fur trade. Although his hopes of finding a river with a Pacific outlet were dashed, Mackenzie's expedition did manage to chart the river that took his name, the second longest North American waterway (known to the Dene as Deh Cho). Thus a new empire in the west was opened, an empire based on the plentiful wildlife inhabiting the Mackenzie's boreal forests.

The Athabasca and Mackenzie regions became the final battleground for fur as the 19th century opened. The aggressive NWC had established posts on Great Slave Lake as early as 1786.[5] By 1805, they had major trading posts at Fort Norman, Fort Good Hope, and at the confluence of the Liard and Mackenzie Rivers.[6] The HBC eventually responded with a rival post right next to the main depot of the NWC at Fort Chipewyan on Lake Athabasca. But both competition and cost proved prohibitive. Neither company could afford to acquire high quality peltries from the North's isolated posts while grappling with their rival along established trade fronts. The NWC had even closed their Mackenzie River posts in 1815 due to food shortages. However, the companies could not afford to ignore the new territory. The more accessible fur supplies to the south were drying up, and action had to be taken. In 1821, the economically fragile Nor'Westers amalgamated with the HBC. With one commercial interest monopolizing the region, there finally existed the potential for starting a land management policy.

Though forest protection policy was still decades away, commercial involvement in the Mackenzie made the effects of large scale fires a matter of concern. Fire-induced disruptions of the fur supply were a great threat to the Company's vital needs. An example of one such disruption beset traders in northern Saskatchewan during the fall of 1813. After huge fires decimated the animal population, fur returns were substantially weakened throughout the

Saskatchewan districts.[7] The more northerly fur trade was certainly no less sensitive to the relationship between large scale fires and wildlife populations.

As we have seen, the evolution of a fur trade economy in what is now northern Alberta shifted Indians' traditional burning patterns.[8] By encouraging natives to trap the most prized pelts—beaver, fox and marten—the traders affected the evolution of Indian pyrotechnology. What followed ~~was~~ the maintenance of habitats frequented by animals of high value. That fashion whims in Europe could have had such an early influence on environmental management in Canada's hinterlands is an interesting concept.[9] However, there were more dramatic changes springing from the establishment of trade in the Mackenzie region; the consequent increase in population played a role in reshaping the forest environment. Besides the Europeans, the Cree flowing northwest with the trade lines, exemplified the shifting demographics.[10] Throughout the latter half of the 18th century, there was also an influx of more Chipewyan Indians lured to the region by the prospect of trade while the original Slaveys moved to the Mackenzie[11] This surge in the local population certainly increased the possibilities of man-caused fire. Moreover, as the number of hunters swelled so did the volume of prescribed ignition. While it is known that the Cree used prescribed fire to maintain trapping areas, there is less certainty regarding the Chipewyan. HBC officers certainly viewed the local Chipewyan as a serious cause of fire. "Fires in every direction" reported an astonished officer at the Fort Chipewyan post in 1826, "these Chipewyans I can't imagine what prepossession has now taken hold of them, blazing the Country in this manner."[12] The prolonged era belonging to nomadic tribes and explorers was ending and, through activity surrounding the nascent fur trade, a slightly different fire regime was being established.[13] Indians and Europeans had begun redefining their roles in the northern ecosystem, effecting a transition in the distribution and load of wildfire.

The traders had to work out a more permanent relationship with their environment. Setting up shop in the northwest was a relatively expensive proposition. A large capital investment was necessary to establish and maintain the isolated posts. In May of 1815, the *Carlton House Journal* reported that the "country all around" and for a "considerable distance" was ablaze. The men worked around the clock to prevent the fire from "communicating with the works."[14] The need to protect the cache of furs, food, and manufactured goods found at trading posts, was the inspiration for initial protection plans. The posts were the first in a long line of northern commercial operations requiring protection from the ravages of fire. By the 1840s the HBC had several posts strung along the Mackenzie, and Fort Macpherson on the Peel River. Though few references to wildfire exist in the journals for posts in the NWT, Gregory Thomas' investigation of fire and the fur trade in the Saskatchewan District does offer insights into the HBC's northern situation.[15] While focusing on the plains fire and its usefulness as a weapon in the fur trade, Thomas describes rudimentary precautionary measures taken by company officers to protect their posts: rubbish was cleared from around buildings; water was kept on hand; nearby fires were patrolled; in some cases all post residents would be sent to battle the flames. Thomas concludes that the very survival of HBC officers was dependent on a respect for fire.[16] Soon such respect was to be reflected in the development of formal written regulations regarding fire protection.

II

Elaboration on the genesis of policy in the west provides a contextual base upon which the northern drift of forest protection can be understood, since the spread of policy west was an essential precursor to its flow north. Agricultural settlement on the western prairies initiated fire policy and as a result, most of the attention was centred on the problem of prairie fire. The Red River Settlement and Assiniboia District received the first government directions regarding wildfire in what is now western Canada.[17] When land was granted, colonists accepted the same hazards traders had traditionally grappled with: desolation, drought, flood, famine, Indian enemies, and fire. Though little could be done to thwart the natural danger of their environment, attempts could be made to limit the number of man-made fires. With this in mind, the Council of Assiniboia dealt with the matter in May, 1832. To halt "the great injury done to the Woods of the Settlement by fire" either willingly or through negligence, it was decided that regulations were needed to "check this evil."[18] The Council made two resolutions prohibiting people from lighting fires between February and December on their own property or "within 10 miles of the banks of the river on either side . . . ."[19] A hefty ten pound fine gave the legislation ample weight though there was a clause excluding persons who had lit fires "through absolute necessity."[20] Various minor amendments were made to the regulations over the next thirty years, the most important being the narrowing of the necessity provision.[21]

The acquisition of Rupert's Land and the North-Western Territory had always been the intention of the Fathers of Confederation. Prompted by fears of American expansionist ambitions, the Macdonald-Brown coalition government of 1864 declared that the future interests of Canada required strong federal authority in the North West.[22] The development of Ottawa's colonial rule over the western territories at this early date set up the often difficult relationship between federal and territorial authority that has typically marked the evolution of government agencies in the North.[23] Dominion authorities had been planning for the acquisition of Britain's adjacent possessions. In 1869 they passed *an Act for the Temporary Government of Rupert's Land and the North-Western Territory when united with Canada*.[24] The following year the Northwest Territories became a political entity encompassing Rupert's Land and the remaining North Western Territory. Although Metis resistance symbolized the difficulties of such a large and obstinate land transfer, the administering council was able to meet officially by 1872. Political problems and concentration on the establishment of rudimentary administrative needs left little time for land management matters let alone those pertaining to the non-agricultural lands north of the 60th parallel.

However illusory, the trickle of settlers into Canada's new western territory did have some effect on the Mackenzie basin. The "North" was becoming a more precise geographical term as the advance of frontiers continued. Lands lying north of the prairies became the next frontier but change was occurring there as well. The creation of an agricultural hinterland on the prairies pushed the fur trade further north, increasing trade traffic passing through the bottleneck of the Fort Smith portage. Situated along the banks of the Slave River, the post was quickly becoming the important nodal point within the transportation system of the fur trade.[25] Nomadic trappers and river workers began to give way to the more permanent inhabitants employed hauling and shipping the increasing volume of goods down the Mackenzie River. The possibilty of man-caused fire increased commensurate with the population increase. Also, horses and oxen introduced to the area in the late 1870s promoted the burning of hay meadows to ensure ample fodder.[26] The flow of Europeans into the area, augmented by small numbers of missionaries and miners, continued to grow into the twentieth century. Though there was a distinct lack of governmental authority in the region during the 1880s and 1890s, this would not last long. The story of Dominion involvement begins with the gradual unfolding of the western agricultural frontier.

In 1871 the Dominion Lands Branch was given responsibility for managing the vast western plains. With the enactment of the Dominion Lands Act a year later came a preliminary outline for the setting aside of timber lands. A precursor to the reserve system that followed, the Lands Act was official recognition that timber was a basic need of settlers on the sparsely wooded prairie. The Department of Interior, created in 1873, replaced the Lands Branch and took over the land management role in the North-West Territories. Headed by David Laird, the Department initiated general surveys in the west though the northern areas remained to be charted until the 1880s. In 1875 the Liberal government led by Alexander Mackenzie presented The North-West Territories Act. Successfully passing parliament, the Act created a revised Territorial Council that would permit elected members as the population increased. Though not entirely based on the principle of responsible government and without fiscal power, the Council did attend to the various needs of the western settlements. During their first meeting in 1875, the reconstituted Council quickly passed *An Ordinance respecting the Prevention of Prairie and Forest Fires*.[27] Though the ordinance was essentially the same as that instituted decades earlier by the Assiniboia Council, it now encompassed the entire Northwest Territories.[28] In 1879, members of the

North West Mounted Police gained the distinction of being the first Dominion employees officially and actively engaged in suppressing fire in the West.[29] While symbolic of the government's earliest confrontations with fire on the territorial frontier, organized protection was still decades away.

The early forest protection policies Ottawa implemented in the West were not conceived in an ideological vacuum. Like the Dominion's influence on the prairies, and in turn, the prairies' influence on the North, the United States commonly guided Canada's approach to the problem of fire. The momentous beginning of this historical trend can be traced to April,1882, and the first meeting of the American Forestry Congress. Convening in Cincinnati, Ohio, the Congress was a direct result of the burgeoning conservation movement in the United States. Canadian members of the American Forestry Association were invited and contingents from Ontario and Quebec—representing broad general interests—were able to send delegates. The Canadian group convinced the Congress to hold a fall meeting in Montreal the very same year. Though the majority attending these preliminary meetings were drawn from the lumber trade, the Montreal session included a number of Members of Parliament.[30] The destruction of forests by fire was a major concern at the meeting and, while most of the attention focused on the fire issue was a result of the concerned lumbermen attending, there was also general discussion regarding fire and settlement.[31] Proposals made by the meeting's forest fire committee included the establishment of forest reserves, stricter regulation of brush burning, and the creation of an agency "to enforce regulations and to organize fire suppression activities when necessary."[32] Although inspired by the central Canadian lumber industry, the committee's recommendations prompted future legislation and heightened the profile of forest conservation in Canada.

Fire was becoming a more important issue in the minds of Dominion bureaucrats during the 1880s. Robert Bell, a prominent geologist and naturalist with the Geological Survey of Canada, reported widely on his surveys of Canada's forests.[33] Bell's evocative writings on fire in the boreal forest were breathtaking, if not somewhat embellished, and undoubtedly fueled the cause of Canadian forest protection. Prior to an emotional description of "terrified" animals "overtaken and destroyed" by a conflagration in a northern forest, Bell offers this account:

> When the fire has got under way the pitchy trees burn with almost explosive rapidity. The flames rush through their branches and high above their tops with a terrifying sound. The ascending heat soon develops a strong breeze, if a wind does not happen to be blowing already. Before this gale the fire sweeps on with a roaring noise as fast as a horse can gallop. The irresistible front of flame devours the forest before it as rapidly as a prairie fire licks up the dry grass. The line of the gigantic conflagration has a height of 100 feet or more above the tree tops, or 200 feet from the ground. Great sheets of flame disconnect themselves from the fiery avalanche and leap upwards as towering tongues of fire, or dart forward bridging over wide spaces, such as lakes and rivers, and starting the fire afresh in advance of the main column . . . .[34]

Bell's intimate knowledge of Canada's forest lands stemmed from lengthy practical experience. Northern and western surveys conducted by Bell in the 1870s helped map the northern limit of Canada's forests and imbued him with a conservation ethic. Bell tied his eloquent description of a fire raging through Canada's woodlands to a strong plea for forest protection. Estimating the yearly loss of wood to fire as enough to "supply the domestic wants of the whole Dominion for nearly half a century," Bell called on the government to create an agency to enforce fire ordinances.[35] "Officers" or "guardians" would have the power to prosecute people caught fire raising while keeping an eye on "careless Indians, explorers, and bush travellers."[36]

The Government had already recognized some of Bell's concerns. Interest in the Dominion's entire forest wealth grew in the 1880s as surveys pushed further into the Territories. Sir John A. Macdonald's administration was making tentative steps to address the shortage of timber near western settlements and paid increasing attention to the fears of forest destruction expressed by government officers like Bell. Growing out of the American Forestry Congress of 1882 was the appointment of J. H. Morgan as head of a forestry commission that surveyed forest conditions and needs while raising the profile of forestry issues. In 1885 his first official report summed up the uselessness of fire control in the Canadian context and, unwittingly revealed the thrust of northern policy for the next half century: ". . . [the] immensity of our forests, and their great distance from settlement, renders any such measures impractical in Canada. There remains, then, but one hope for us, and that is in *prevention*."[37] Like in the United States, a firm belief in the policy of prevention became entrenched in Canada, but means were still needed to put fires out[38].

The quickening pace of settlement, greater, more localized legislative power, and a railway linking and increasing the population centres, all provided the crucial impetus needed to develop forest protection policy in the West. By 1891, the North West Territories population had climbed to 95,000—almost double the 1871 figure of 48,000.[39] Not only did the growing population emphasize the intractable relationship between fire and man, it altered the face of government. In 1888 the population growth enabled Parliament to establish a legislative assembly in the Territories. Though not an instantly powerful nor autonomous governing body, it was able to wrest greater legislative authority from Ottawa through the *North West Territories Act of 1891*. However, until granted an executive council in 1897, the Assembly lacked the power inherent in a fully responsible government. Still without full control of funding and natural resources, the Territories were unable to initiate their own comprehensive policies regarding fire. This role remained in the hands of the Dominion government.

Ottawa felt a new sense of urgency when the arrival of rail transportation in the West introduced a new source of fire to the landscape. Throughout the railway's early years reports frequently implicated firebrands thrown from railroad engines as the cause of prairie and forest fires. Murphy's investigation of fire control policies in the West leaves little doubt that railways created major and persistent fire problems for many years.[40] Although a railway was non-existent in the present day NWT until 1964, the fact that developments in conveyance could have such disastrous effects on a comparable fire regime is relevant to the story further north. The fires powering the engines of industrial progress were strengthening the trend of man as incendiary. Though lacking railways, the North had its own fire difficulties stemming from transportation. By 1885 steam transport began taking over sections of the Mackenzie waterway.[41] Like the trains that rolled across southern Canada, steamers plying northern rivers would create fire problems of their own.

Between 1883 and 1887 the HBC launched three vessels in the Mackenzie River Basin: the *Athabasca* to service Athabasca landing; the *Grahame* which worked the lower Athabasca, Slave and Peace Rivers; and the *Wrigley* on the Slave and upper Mackenzie Rivers. The steamer routes along these major rivers contributed to an intensification of trade and travel throughout the entire northern waterway. Noting that the HBC had participated in a "transportation revolution," Morris Zaslow pointed out that this was not completely to the HBC's advantage since the northern districts' traditional inaccessibility had been "one of the company's greatest sources of strength."[42] Competitors could now use the expanded transportation system to penetrate the last great fur region. The HBC's new rivals were transient "free traders," an apt label given their propensity for intercepting pelts normally bound for company-run posts by offering higher prices.

Steam transport brought native trappers some competition of their own. By the turn of the century white trappers were scattered throughout the region's accessible forest.[43] Though the disruptive effect these newcomers had on the fire regime can only be surmised, the damage inflicted on game populations was evidently dramatic. The government responded by initiating the first specific regulations applicable to renewable resources in the North. Through the *Unorganized Territories' Game Preservation Act* of 1894, the government sought to protect threatened species—wood bison and musk-ox—while limiting the hunting season for smaller fur-bearers.[44] This act was more symbolic than practical as the North-West Mounted Police (NWMP) were only thinly spread in northern forests. The Mackenzie District was without patrols of any sort until 1896 and waited until 1903 for a permanent police detachment.[45] However impracticable, the wildlife policy was a clear indication of the government's desire to extend its civilizing influence into the North.

Trappers and traders were not the only beneficiaries of steam transport. Greater accessibility enabled many groups to investigate the North's development potential. Launching dreams of adventure and riches, surveyors, miners, tourists, and sportsmen clambered aboard northbound vessels in the 1890s. Like the addition of migrants into the area's fur trade, these people were a dynamic force in the boreal forest environment. Initiating a good deal of the speculative activity were the government surveyors. Bell still typified these officers and continued to build on his early explorations of Canada's forest wealth. But in 1899 his final northern study was devoted exclusively to the geology of Great Slave Lake region. The thrust of northern exploration had been altered within the thirty year period Bell served with the Geological Survey. His general examination of Canada's forest belts in the 1870s gave way to more precise examinations of Canada's resources near the turn of the century. With greater stress placed on the practicalities of development, the forested north came under strenuous and often surprising scrutiny.

By the 1890s survey work was been carried out along the breadth of the entire northern frontier.[46] A Senate committee struck in 1887 diverted the energies of survey officers away from the agricultural west and into the largely unknown hinterland of the Mackenzie Basin. Much of the work was devoted to mapping and describing the area's potential value in terms of minerals, pastoral land, petroleum, fish stocks, furs, and forests. As mentioned, the government was willing to exercise informed judgement regarding the wildlife resources inhabiting the region's forests but little attention was focused specifically on trees. In most cases survey reports treated timber wealth in a superficial manner. Sliding down well forested river valleys gave many visitors the impression that vast stretches of merchantable timber existed throughout the North. Bell's survey of 1880 alluded to spruce along the Coppermine River "to within twenty or thirty miles of the sea."[47] R. G. McConnell's reconnaissance of the Slave River in the late 1880s prompted a typical description: "On both sides of the River are level plains, which . . . support extensive forests of white spruce and banksian pine . . . . The Spruce frequently attains a diameter of eighteen inches, and affords excellent timber."[48] McConnell's boss, G. M. Dawson, wrote similarly glowing reports but was able to put the timber's practical value in better perspective. Calling the remote districts places "in which no volunteer will ever voluntarily settle," he felt the area could "afford timber which the world will be glad to get when the white pine of our nearer forests shall become more nearly exhausted . . . ."[49] Dawson was thinking clearly, since lumber mills serving local needs had only recently been erected in the settled west and would only move slowly north.

Ahead of the lumbermen, raced the fires.[50] Those set by Yukon bound miners posed a more immediate threat to Mackenzie District forests than did the lumberman's saw. While forest potential generated little in the way of development, geological finds were set upon eagerly. The mineral wealth sampled by survey teams in the late 1800s sparked a frenzied immigration of prospectors. A small society of 250 miners was established in the Yukon River valley as early as the mid-1880s.[51] Beginning in earnest after a discovery in the Yukon in 1896, the Klondike gold rush had a substantial impact on the surrounding woodlands. The Mackenzie River route, one of many approaches to the Klondike, was utilized by hundreds of entrepreneurs.[52] Miners would take the northerly route via the Rat and Porcupine Rivers across to the Yukon River or a southerly route up the Liard and down the Pelly River. Predominantly summertime routes, they became increasingly susceptible to fires set by careless travellers.

Lutz concluded that an incredible amount of forest had been burnt during the peak of the gold rush.[53] Apparently the Yukon experienced explosive fire seasons in both 1898 and 1899. One witness to the fires gave this description: "At night camp fires were visible in almost any direction one could look. The moss and brush by this time had become very dry, and as a result of the carelessness of campers in leaving their fires, forest fires began to rage along the valleys."[54] Fire was also commonly used to clear camps and aid placer mining.[55] Established mines would employ fire to thaw through the northern permafrost. Burning cord after cord of split wood, the miners would gradually penetrate the top layers of earth until they reached bedrock. Though the number of fires escaping from these operations was probably limited, there is proof that prospectors burned off heavy forest cover to expose the deposits. Historian Arthur Lower noted that prospectors regarded the forest as an enemy to be got rid of: "The prospector . . . sees in the forest simply a covering preventing his knowing what kind of rock is under his feet."[56] Commenting on a prospector's work in the Peel River region in 1898, a writer observed that "Prospecting for this stuff [auriferous quartz veins] means hunting the veins through the rock with pick and dynamite, after having first burned down the forest to let the surface of the rock be seen."[57]

Though mining was traditionally centred in the Yukon, the search also included areas in the Mackenzie District. Miners following the Mackenzie River route searched for gold along the way by sampling tributary river-beds and surface sediments. There were certainly surveyors and Yukon-bound travellers prospecting around Great Slave Lake during the 1880s and 1890s. Activity in the area allegedly promoted some huge fires. On a hunting trip near Great Slave Lake in 1889 Warburton Pike was struck by the lack of caribou near Fort Smith and the Mackenzie River:

> . . . they [caribou] keep a more easterly route . . . This is in great measure accounted for by the fact that great stretches of the country have been burnt, and so rendered incapable of growing the lichen so dearly beloved by these animals. The same thing applies at Fort Resolution, where, within the last decade, the southern shore of the Great Slave Lake has been burnt and one of the best ranges totally destroyed.[58]

A decade later Charles Camsell filled his report with similar descriptions while surveying the well traveled Salt River area near Fort Smith. Camsell was seemingly forever in "an area of burnt rolling country" and estimated the size of one twenty year old burn: ". . . I may say, that this area extends for a distance of 25 to 30 miles from north-east to south-west and runs as far to the north-west and south-east as could be seen from the tops of the hills."[59] Though extensive tracts of burnt forest were certainly not the reason for the government's move into the North during this era, mining had introduced another source of fire to the boreal environment. Other indirect effects of development would hasten the consolidation of federal control in the North.

III

Before the Dominion government could hope to deal with wildfire in the Northwest it had to provide a more lasting and effective presence. This was especially evident during the days of the gold rush. Associated with the flood of prospectors and settlers was growing concern regarding the lack of government supervision in the area. In an attempt to tighten control over the activities of the largely American speculators, the Yukon District was made a distinct Territory in 1898 and given more intensive administration. Eager to encourage further economic activity in the region, the government ratified *Treaty 8* in 1899 thus removing native title to a broad expanse of land including the Slave River corridor to Great Slave Lake.[60] By 1897 a constable was stationed at Fort Smith and as the representative of law and order in that section of the country he evidently had a noticeable impact.[61] Clearly, rudimentary steps were being taken to provide the region with a government infrastructure. However small such advances seem, they set the pattern of government growth and control in the North for the next century. Development interest in the Canadian North has traditionally come in bursts. The public and private initiative needed to open the frontier has rarely been sustained long enough to promote any constant economic activity or settlement. At the turn of the century this was especially true. The inspiration for development remained in the hands of government authorities in Ottawa or those speculating capitalists who would find in the North very little in the way of bureaucratic interference.

Intensification of the government's presence in the northerly sections of the NWT was preceded by their continual concentration on western settlement. Following the establishment of the District of Keewatin in 1876, the provisional Districts of Alberta, Assiniboia, Athabasca, and Saskatchewan were created out of the southern part of the Territories in 1882. Of the five only Athabasca and Keewatin lay north of the fifty-fifth parallel. The remaining northerly lands were separated into the districts of Franklin, Mackenzie, Ungava and Yukon in 1895. Lying to the north and east of those previously established, these four districts were unorganized and, excluding the Yukon, received little consideration from government.[62] Besides regulations pertaining to wildlife resources and a handful of survey parties, Dominion authority in the new unsettled districts was largely non-existent. Moreover, during the 1890s the NWT's own Legislative Assembly remained unable to do much for the isolated districts. Even after receiving an Executive Council and the complete trappings of responsible government in 1897, the territorial government centred in Regina was effectively powerless. As the territorial population rapidly increased at the turn of the century, Ottawa continued to limit Regina's legislative authority while remaining cool to proposals for increased financing.[63]

Regardless of the inadequate Dominion funding available for fire protection as the century came to a close, the Territorial government did exhibit a keen interest in preventing wildfire. In 1886 the Territorial Council established "fire districts" and appointed a small group of "fire guardians" to enforce the fire ordinance first promulgated by the Council in 1875. Amended several times throughout this period, the ordinance became quite comprehensive. By 1898 the revised act reflected the West's incipient agricultural settlement. Aptly referred to in 1898 as "The Prairie Fire Ordinance," it ran to four pages and described provisions regarding fireproofing and agricultural machinery, railway regulations, and the fire guardian's responsibilities.[64]

During this same period the Dominion government was realizing a more enlightened approach to general forest management. The 1890s saw federal attention focusing on irrigation, reforestation, and protection. Activity surrounding the creation of forest reserves encapsulated these various issues. The need to set aside forest land reflected how closely conservation was tied with settlement. A desire to preserve specific woodland areas was broadly rationalized by two goals: to ensure an enduring wood supply while maintaining critical watersheds.[65] The Department of the Interior officially adopted a reserve system policy in 1893 and simultaneously passed the first *North West Irrigation Act*. Timber and water were acknowledged prerequisites for successful settlement. This was not lost on western settlers who realized that their hopes were pinned on the government's resolve to deal with forestry issues, particularly the problem of fire. A survey conducted in the early 1890s attests to the fact that many settlers in the Northwest were concerned with the forest environment and conservation.[66] Fire damage was a prominent theme of the surveyed response and garnered an increasing amount of attention in contemporary government reports [67] Though little had been accomplished to control fire, a widespread realization of the problem was becoming evident.

The Canadian conservation movement gained further practical strength in 1896 when Clifford Sifton became federal minister of the interior. Sympathetic to American public lands policy and scientific forestry, Sifton stimulated government leadership in resource use.[68] A direct result of Sifton's conservationist ideology was his creation of an investigative forestry agency in 1899. Elihu Stewart, an able, forward looking man, was appointed by Sifton to the new position of Chief Inspector of Timber and Forestry within the production-oriented Timber and Grazing Branch. Citing a desire for Stewart to "give special attention to forest preservation . . . . Particularly in the North-west," Sifton backed Stewart's appointment by assuring colleagues that the inspector would be "one of the busiest men in the department."[69] Busy indeed: by 1901 Stewart's efforts were seen as important enough to warrant the establishment of a Forestry Branch independent of the Timber and Grazing Branch. With Stewart at the helm of the new agency, forestry was able to acquire an even higher profile in the eyes of Dominion bureaucrats. Moreover, in doing so the government would finally take a good glance at the forests north of the settled West.

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[1] A. R. M. Lower, *The North American Assault on the Canadian Forest: A History of the Lumber Trade Between Canada and the United States* (Toronto: The Ryerson Press, 1938) p. 1.
[2] Bell, "Forest fires in northern Canada," p. 3.
[3] Donald Creighton, *The Empire of the St. Lawrence* (Toronto: Macmillan, 1970 [1937]) p. 70.
[4] Coates, *Canada's Colonies*, p. 42.
[5] See James Parker, *Emporium of the North: Fort Chipewyan and the Fur Trade to 1835* (Alberta: Alberta Culture and Multiculturalism, 1987), pp. 30, 104.
[6] Ibid., p. 45.
[7] Gregory Thomas, "Fire and the Fur Trade," *The Beaver* (Autumn 1977) p. 37.
[8] See references provided in chapter I.

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[9] That movements in Europe can have a strong influence on society in northern Canada should come as no surprise. For example, Europe's interest in fur has taken on a new meaning in recent years as animal rights groups expand. At present, the most traditional lifestyle remaining to native northerners is threatened by anti-trapping activists both within Canada and abroad. A ban on leg-hold traps and/or a sharp decline in the demand for furs would probably decimate northern trapping and consequently redirect the focus of forest protection policy in the NWT.

[10] For this discussion the standard historiography regarding the movement of the Cree has been followed. See Diamond Jenness, *Indians of Canada* (Ottawa:National Museum of Canada, 1932) passim. A recent revisionist study of Cree demography concludes that they did not move west with the fur trade and were, in fact, inhabiting areas from "Lake Winnipeg to the Peace River" long before the eighteenth century. See James G. E. Smith, "The Western Woods Cree: Anthropological Myth and Historical Reality," *American Ethnologist*, Vol. 14, no. 3 (August, 1987), pp. 434-448.

[11] See E. E. Rich, *The Fur Trade and the Northwest to 1857* (Toronto: McClelland and Stewart Limited, 1967), pp. 171-174.

[12] As quoted in Theresa Ferguson, *In Search of the Elusive*, p. 12. Ferguson hypothesizes that the Chipewyan may have learned the beneficial uses of applied fire—where trapping was concerned—from Cree neighbours. Because their traditional lifestyle on the northern fringes of the subarctic forest was based on migrating Caribou, the Chipewyans' southwesterly movement into the boreal woodland may have necessitated changing hunting techniques.

[13] There is of course no way of verifying that there was a dramatic increase in area burned as a result of the fur trade. Though extensive research may be able to irrefutably prove this point, it is not really the issue. What is crucial is that man's effect on the fire regime varied—however subtly—with historical events. Also critical is the changing response of man to fire through the period under review.

[14] Hudson's Bay Company Archives, Carlton House Journal, 1814-15, B.27/a/4, fo. 20. This journal entry was made by John Peter Pruden.

[15] See Thomas, "Fire and the Fur Trade", pp 32-39.

[16] Ibid., p. 39.

[17] Murphy, p. 50.

[18] Fire Ordinance 1832, Council of Assiniboia, *Proceedings of a Council at Fort Garry on Friday, the 4th day of May, 1832*, as quoted in Murphy, *History of Forest and Prairie Fire Control*, p. 362.

[19] Ibid., p. 362.

[20] Ibid., p. 362.

[21] Amendments were made to the legislation in 1835, 1841, 1852 and,1862. A good summary of these changes can de found in Murphy, Ibid. , p. 51.

[22] Lewis H. Thomas, *The North-West Territories, 1870-1905*, (The Canadian Historical Association, Booklet No. 26 (Ottawa, 1970). p. 3. Lewis' booklet is a short, standard explanation of the development of federal authority in the west.

[23] Describing the federal-territorial relationship in this manner has been a common thread in the historiography of governmental evolution both on the prairies and in the North. An example of this interpretation see, Lewis H. Thomas, op. cit. ., passim; a more emotional explanation that concentrates specifically on the North can be found in Coates, *Canada's Colonies*, p. 10-14.

[24] Lewis H. Thomas, op. cit. , p. 4.

[25] J. G. McConnell, "The Fort Smith Area, 1780-1961; an Historical Geography" (unpublished M. A. Thesis, University of Toronto, 1966), pp. 53-61. The Methye portage route was closed in 1886 as the CPR route to Calgary, and the Athabasca Trail from Edmonton were substituted.

[26] Mention is made of the use of draught animals in the Fort Smith area in in McConnell, "The Fort Smith Area," p. 73. In 1887 a member of the Geological Survey noted cattle at Fort Providence and an abundance of high quality hay, see R. G. McConnell, *Report on an Exploration in the Yukon and Mackenzie Basins, N. W. T.* (Montreal: William Foster Brown & Co. , 1891), p. 79. For an informative discussion on the firing of boreal meadows see Lewis, *Maskuta*, passim.

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[27] Council of the Northwest Territories, 22 March, 1877. As quoted in Murphy, *History of Forest and Prairie Fire Control*, p. 372.

[28] Much of the data for this era is elaborated on in Murphy's informative study, *History of Forest and Prairie Fire Control*, pp. 51-127.

[29] As quoted in Murphy, *History of Forest and Prairie Fire Control*, pp. 65-66 Though the federal authorities had already dealt with fire policy, the "strenuous exertions" of NWMP men in protecting haystacks after having "saved lives" appears to be a first.

[30] R. Peter Gillis and Thomas R. Roach, *Lost Initiatives: Canada's Forest Industries, Forest Policy and Forest Conservation* (New York: Greenwood Press, 1986), p. 39. A review of these meetings can be found on pp. 35-40.

[31] Ibid., p. 39.

[32] Ibid., p. 40.

[33] See Bell, *Forest Fires in northern Canada*; and, *Geographical Distribution of Forest Trees in Canada* (Toronto, 1897).

[34] Bell, *Geographical Distribution*, p. 294, as quoted in Richard S. Lambert and Paul Pross, *Renewing Nature's Wealth: A Centennial History of the Public Management of Lands, Forests & Wildlife in Ontario 1763-1967*. (Toronto: Ontario Department of Lands and Forests, 1967), p. 204.

[35] Bell, *Forest Fires in Northern Canada*, p. 7.

[36] Ibid, p. 7.

[37] Canada, Department of the Interior, *Annual Report 1884, Sessional papers (No. 13)*, as quoted in Murphy, *History of Forest and Prairie Fire Control*, p. 73.

[38] A good summary of American fire prevention is provided by Pyne, *Fire in America*, pp. 161-180. Much of this chapter is applicable to the Canadian experience.

[39] *Census of Canada 1931*, vol. 1, Table 7a.

[40] Murphy, *History of Forest and Prairie Fire Control*, p. 70; see also, pp. 74-101.

[41] McConnell, "The Fort Smith Area," p. 64.

[42] Morris Zaslow, *The Opening of the Canadian North*, (Toronto: McClelland and Stewart, 1971), p. 57.

[43] Ibid., p. 235.

[44] Ibid., p. 96.

[45] Ibid., see pp. 97 and 237; see also, William R. Morrison, *Showing the Flag: The Mounted Police and Canadian Sovereignty in the North, 1894-1925* (Vancouver: UBC Press, 1985).

[46] Ibid., pp. 77-88.

[47] Robert Bell, *Gazette* (Montreal, 1882), repr. "from the report of the survey for 1880," p. 9.

[48] R. G. McConnell, *Report on an Exploration in the Yukon and Mackenzie Basins, N. W. T.* , p. 64.

[49] G. M. Dawson, *On Some of the Larger Unexplored Regions of Canada*, as quoted in Appendix I of Warburton Pike, *The Barren Ground of Northern Canada* (New York: Arno Press, 1967), pp. 280-281.

[50] Zaslow, p. 91.

[51] Coates, *Canada's Colonies*, p. 68.

[52] Though the exact number of miners using the Mackenzie River route is unknown, the number must have been substantial. In fact, another writer believes that some 130 Klondike-bound travellers never even finished their journey and instead became involved in trade along the route. See Peter J. Usher, *Fur Trade Posts of the Northwest Territories, 1870-1970* (Northern Science Research Group: D.I.A.N.D., 1971), p. 26.

[53] Lutz, *Aboriginal Man and White Man*, p. 26.

[54] Ibid., p. 26.

[55] A good citation pertaining to the use of fire in clearing mining camps can be found in Lutz, *Aboriginal and White Man*, p. 33. The use of fire in mining is summarized by H. A. Innis, "Settlement and the Mining Frontier," in *Settlement and the Forest and Mining Frontiers*, ed. W. A. Mackintosh and W. L. G. Joerg (Toronto: Macmillan, 1936), pp. 199-204.

[56] A. R. M. Lower, "Settlement and the Forest Frontier in Eastern Canada," in *Settlement and the Forest and Mining Frontiers*, p. 21.

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[57] Lutz, *Aboriginal and White Man*, pp. 33-34.

[58] Pike, *The Barren Ground of Northern Canada*, p. 46. The relationship between fire and wildlife—particularly caribou—was commonly noted in this early period, and is an important historical thread running through this entire study. Fire's interference with caribou was also reported by Albert P. Low. While surveying east of Hudson Bay in the 1890s, Low cited starvation among the natives in the winter of 1892-93 due to the effect of forest fires on traditional migration routes. See, Zaslow, *The Opening of the Canadian North*, p. 85.

[59] C. Camsell, "The Region South-west of Fort Smith, Slave River, N.W.T.," *Summary Report on the Operations of the Geological Survey, 1902* (Ottawa: King's Printer, 1903), pp. 155-156.

[60] Coates, *Canada's Colonies*, p. 85.

[61] Jonquil Graves, *A History of Wildlife Management in the Northwest Territories* (unpublished, 1988), p. 31.

[62] Zaslow, *The Opening of the Canadian North*, p.95.

[63] Thomas, *The North-West Territories*, pp. 16-17.

[64] All the relevant ordinances are reproduced in Murphy, *History of Forest and Prairie Fire Control*, pp. 370-391. Also see Murphy's summary of the ordinances, pp. 57-101. passim.

[65] Ibid., p. 86.

[66] Ibid., pp. 86-87.

[67] Ibid., pp. 82-87.

[68] Gillis and Roach, *Lost Initiatives*, p. 52. Also see, D. J. Hall, *Clifford Sifton: Volume One, The Young Napoleon, 1861-1900.*

[69] Murphy, *History of Forest and Prairie Control*, pp. 102-104. Also see Gillis and Roach, *Lost Initiatives*, pp. 52-57.

CHAPTER 3

The Rise of Federal Forestry and its Northward Expansion, 1900-1920

> We burned the meadows to keep them clear of poplar, every spring while there was still snow in the bush . . . . But we had to stop, before I was 20 even.
> —Chipewyan man near Fort Smith, born 1909[1]

> In this District, when a fire has got well under way, it appears to me to be a waste of money to try and control it as can be done in civilization.
> —Ranger, Mackenzie River Fire-ranging District, 1915.[2]

The turn of the century emergence of the Dominion Forestry Branch (DFB) was important. The DFB was the impetus for scientific forestry throughout Canada and its policies had a great influence on the forests of the West. The support the fledgling DFB received from Clifford Sifton until 1905 (while Minister of the Interior), was resumed to a degree when Sifton became chairman of the Commission of Conservation in 1909.[3] Although forestry had to compete for attention with other Commission interests, it did become a leading cause in the postwar period of revitalization.[4] The rise of the DFB's status, however, stalled in 1918. Serious rivalries surfaced as the Commission, DFB officials, and the Timber, Mines and Grazing Branch vied for control in forestry matters.[5] With the dissolution of the Commission in 1921, the DFB (also referred to as the Forestry Service after 1917) once again became Canada's pre-eminent forestry agency.[6] The DFB's stature, however, was threatened again in the late 1920s when it became clear that western Canadian forest resources would fall under provincial control.

I

Prior to the 1930 devolution of Dominion responsibility for western natural resources, the DFB exhibited a strong interest in northern forests. The brisk rise of federal forestry from 1900 to 1920 is well reflected in events in the NWT. Active forest protection began in the present NWT almost as soon as the century opened: police officers and seasonal rangers well-schooled in fire regulations began patrolling the Mackenzie District; Elihu Stewart, the superintendent of forestry, made a much-publicized trip into the North in 1906; and, just prior to the Great War, more specific surveys of the region's forest resources were carried out. The government's initial interest in the distant woodlands was spurred by the potential value of the timber in conjunction with a budding conservation ethic which was common to North America. The government was developing a surprisingly forward looking attitude with regard to wildlife resources in the North and began linking the whole question of forest habitat to game populations. Encapsulating these various issues was the creation of Wood Buffalo National Park in 1922, which in time profoundly influenced the delivery of fire protection services to the lands lying immediately north.

As head of the DFB, Elihu Stewart's post demanded that he carry out two related tasks: which were to sell his vision of forest conservation and propagation to the government while instituting services that would earn a constantly greater commitment from Ottawa.[7]. In doing both, Stewart proved to be an able advocate and a solid, practical administrator. The duality of the position suited Stewart. He educated Canadians about the centrality of forest resources to the nation's well-being, and confidently implemented programs in the West that quickly enhanced the status of the young DFB.

In 1900, Stewart set the tone for an impressive eight years as head of the DFB. Avoiding niceties, Stewart's first contribution to the Department of the Interior's *Annual Report* went straight to the heart of the matter and described the government's shoddy record in dealing with fire.[8] Apparently consumed by the subject of fire, Stewart was plainly distressed by the catastrophic destruction of Canada's forests. Providing a very general review which touched on various aspects of forest protection, Stewart addressed the need to assist the RNWMP in their effort to control the fire problem[9] Naturally, the bulk of the report was devoted to the Dominion controlled lands lying beyond Ontario and his insights were applicable to the Northwest and North. The boreal forest of the then NWT was included within Stewart's discussion of what he called the "Great Northern Belt." Lending strength to the belief that man was to blame for the majority of fire activity in isolated districts, Stewart presumed the fire load in this remote region to be relatively light, but he concluded that the government should accept the "responsibility of preventing as far as possible these virgin forests from meeting the fate that has overtaken those in more frequented parts."[10] Until 1930 that simple philosophy guided the introduction of fire protection policy in the NWT.

With experience, Stewart honed his arguments for forest protection on Dominion lands, and silviculture in the prairie West. He realized that the mission to halt forest destruction depended on those with control of the public purse and presented the case of the underfunded DFB as if before a sleepy tribunal, dramatically emphasizing that the government had a responsibility to protect woodlands since they were a communal possession that would surely suffer if left in private hands. Stewart called forest management a "legitimate function of government," and asserted that it was the state's "duty to expend such of the public funds as may be necessary" to protect forests for future generations.[11] In making his point, Stewart often borrowed from reports by government officers who could vouch for the potentially merchantable spruce stretching to Canada's northern shores. He also pointed out the need to conserve these tracts of spruce by describing the once great pine stands of central Canada, stands largely destroyed by fire and axe.[12]

Defending the "philosophical dissertations, detailed explanations and rationalizing" so characteristic of Stewart's early efforts, Peter Murphy's recent analysis lists many concrete results stemming from his promotional work. For example, in 1901 timber regulations pertaining to fire were bolstered, seasonal forest rangers were being gradually added to the government payroll, and renewed attempts were made to eradicate fire along rail corridors.[13] Stewart's influence appeared instantaneous, his initiatives apparent even on the distant Mackenzie River; by 1902 river travellers were meeting conspicuous fire notices throughout their journey.[14] Stewart was successful in certain reforms, such as in getting forty seasonal rangers distributed throughout the Dominion by 1904, but unsucessful in that he saw fires as still needing more attention. In 1904, Stewart—now known as the Superintendent of Forestry—continued his traditional and fervent appeal for forest protection:

> The spectacle witnessed by the traveller passing through our unsettled forest country is sad indeed. On every hand he beholds the charred remains of the old time forest. . . . Everywhere this destruction of public property is before his eyes, and it is humiliating to confess, as we must do, that the fires which caused this great loss were not only permitted but in most cases caused by our own people.[15]

Stewart's mission was not without broader support during this period. His preoccupation with advocacy yielded him a substantial ally in 1900. Upon taking office in 1899, Stewart became painfully aware of forestry's low status in Canada, and with Department of the Interior support he hurriedly organized a national organization along the lines of the American Forestry Association. During the spring of 1900, the Canadian Forestry Association (CFA) held its first meeting in Ottawa.[16] Attended by an eclectic group of businessmen, bureaucrats and politicians, the meeting gave the CFA its start as an effective and influential lobby group.[17] In 1906, the Association sponsored a Canadian Forestry Convention which effectively raised Stewart's argument for a national forestry policy to the higher political and public level it needed for success.[18]

At the 1906 convention, the Superintendent of Forestry spoke at length about the idea of preserving forests in the "far north." Acknowledging that the land was unsuited for agriculture, Stewart linked the preservation of the subarctic spruce to future demands for pulp-wood and spoke of the forest's vital role as habitat for valuable fur-bearing animals.[19] Following Stewart's presentation to the 1906 convention, the eminent geologist and explorer Robert Bell lent his support to the notion of forest preservation and, in a typically overblown fashion, shared his unique perspective on the fire problem in the subarctic:

> [T]his northern forest is subject to fire in a special degree, because the trees stand close together and many have branches down to the ground; so that, when a fire is raging, its fuel is close enough together to make a solid mass of flame. When one of these fires starts, it sweeps on with remarkable velocity, and, in the course of a day or two may destroy ten million acres of forest.[20]

Bell went on to report that lightning, not Indians, was causing the greater part of the fires, and he mentioned having seen "several fires burning at the same time, where not an Indian was within a hundred miles of them."[21]

During the 1906 convention, Stewart also railed against the government's suddenly non-committal attitude to forest exploration.[22] Stories alleging well-sized northern spruce were legion by 1906 and Stewart was curious as to their accuracy. Leading by example, the Superintendent embarked that summer on a steamer trip down the Mackenzie and up the Yukon Rivers.[23] The voyage was a prudent and symbolic way to combine his plea for the protection of far-flung woodlands with the matter of exploration. A saw-mill at Fort Simpson and the supplies of whip-sawed lumber utilized throughout the Mackenzie Valley alerted Stewart to the potential of the impressive spruce stands he saw as he travelled along northern rivers.[24] R. H. Campbell, who succeeded Stewart as Superintendent in 1907, continued to push for protection in these isolated regions. Deeming it the last great forest area of the West, Campbell did not want the area to suffer the fate of other districts in the Dominion, presenting nothing "but a blackened and almost barren waste instead of the forest which once clothed it and made the whole district rich and habitable."[25]

Prior to World War I, forest protection in Canada received its most significant push as a result of the conservation movement. It is certainly no coincidence that a systematic fire program in the NWT got under way while the Commission on Conservation sat from 1909-1921, years when the government seemed especially attentive to conservation issues. No amount of pleading on the part of the DFB was as influential in publicizing the devastation of Canadian forests as the political climate during the early years of the commission.[26] Influenced by the American conservation movement and the lead taken by President Theodore Roosevelt in holding a conference on the issue in 1908, Canada established the Commission one year later. Forest conservation was perhaps the commission's pre-eminent interest. Professional foresters and various forestry officials exhibited serious interest in conservation and are credited with initiating the Canadian movement, stimulating its growth, and directing its energies.[27] Their ideology did away with the romantic notions of preservation popularized by Victorian Canada's fascination with natural theology but, like its predecessor, the conservation movement did assume that man enjoyed a special place above and beyond nature.[28] In the early twentieth century, Canadian conservationists were guided by the progressive liberal tradition which imbued society with the belief that by way of scientific methodology, exploitation could be managed so as not to destroy the resource.[29]

Two notable themes sprang from the application of conservationist thought to the question of remote forestlands. The most obvious was the growing conviction that fire protection was a form of conservation. This belief lent strength to the DFB's campaign against fire. Growing support for conservation finally helped provide a positive response to forestry officials' decade-long call for expanded services as a greater commitment was made for fire prevention in unsettled areas. Many Canadians began accepting the fact that forest resources were not infinite—even the forests of the North were gradually perceived to be limited.

The other theme centred upon the liberal belief that all resources have a potential for use. With the help of the Commission of Conservation, questions regarding the utility of subarctic forests were answered more comprehensively.[30] Studies instigated by the various committees helped define why the distant woodlands were important. Of course, anyone familiar with the settlement of the plains realized this.[31] In the West, a managed supply of timber had become a priority. Settlers in the North suffered similar problems. In areas near or beyond the Arctic Circle, trees of any size were a precious commodity. Besides providing material for construction, trees were a crucial source of fuel. The numerous steamers chugging up and down northern rivers consumed tremendous amounts of wood and there was a good deal of concern that the most valuable spruce stands would be fed into steamboat boilers. Wildlife conservation efforts in the NWT also continued to emphasize the importance of healthy forest cover as habitat for animal populations. After 1910, caribou and buffalo studies carried out in the region helped drive home the fact that rangeland destroyed by fire could undermine even the most earnest preservation projects.[32]

II

The conservation movement hastened the delivery of fire protection services to the frontier. By 1908 there were 34 seasonal rangers in Alberta.[33] Working as far as the Peace and upper reaches of the Slave River, the patrols were getting progressively closer to the NWT. Assisted by members of the HBC, the RNWMP, and missionaries, the ranger's work lay largely with fire prevention. Scattered over a huge landscape, the best this small number of men could hope to achieve by their efforts was a reduction in fire starts along major transportation routes in the unsettled regions. Apparently the results justified a constant enlargement of patrol routes. In 1908, R. H. Campbell continued crusading for extended patrols in the northern Peace River district and the placement of a special inspector for timber matters in the northern districts.[34] During the 1911 fire season, he successfully pushed the patrol routes north of 60 degrees latitude. That summer, A. J. Bell, Dominion Government Agent in Fort Smith and Chief Ranger for the Great Slave Lake River district, reported on patrols from Fort Chipewyan to Fort Resolution.

He also reported that fire notices in Cree, Chipewyan and English, were posted and handed out to explorers, traders and other northern travellers.[35] Although such advances were small, they gave the DFB a presence in the North that eventually influenced traditional fire practices.

Attempts at providing a patrol system in the Mackenzie District from 1910 to 1920 were fraught with problems. The greatest handicaps were created by the North's cruel geography and almost insurmountable distances. Poor communication, inconsistent transportation, and the matter of introducing natives to the foreign idea of fire regulations, all presented unique difficulties. Mail facilities were infrequent and irregular; mail in and out of the Mackenzie District could take months getting to its destination. Not surprisingly, a 1913 report from the ranger at Fort Smith took over five months to find its way into the DFB office at Ottawa. Distance has traditionally retarded development in the North, but in the case of forest protection, it appears to have been particularly pronounced. For instance, how was the northern population, spread across the vast landscape, to be educated in matters of fire prevention? Not to mention the anxiety and potentially furious paddling a large and distant smoke plume might cause a northern ranger working the far end of his beat and perhaps 100 miles away. In 1915, for example, one ranger's patrol route encompassed the area of Fort Smith to Fort Resolution, and the country adjacent to Great Slave Lake, its tributaries, and the Mackenzie River, as far as Fort Providence.[36] The various barriers to controlling fire on the frontier were certainly not lost on forestry officials who cherished any small success in their quest to civilize a forest environment that refused to be tamed.

Another typically perplexing matter was that of transportation. Steam powered vessels were still the traditional means of working northern rivers.

By 1915 two forestry department steamers, the *S. S. Rey* and the *S. S. Hope*, were each carrying three to four men on patrols in the NWT. The *S. S. Rey* operated above Smith's Landing on the Slave and Peace Rivers while the *S. S. Hope* worked the lower Slave and Great Slave Lake. Ironically, the forestry patrol boats of this era significantly added to the fire problem, but they were apparently not the sole contributors. In 1913, a ranger reported that four HBC steamers were not properly equipped with "spark arresters." Compelled to suggest precautionary measures for the vessels in question, the ranger prudently remained silent after noting that the government boats were equally guilty and threw out "just as many and as large sparks as any of the others . . . ."[37] Fueling the steamers also had a detrimental effect on the timber stands that bordered northern waterways. Government agents were appalled by the vast amounts of merchantable spruce "ruthlessly hewed down" for fuel, in spite of the fact that the vessels often had equal access to burnt or dead timber. In 1917, a report initiated by the Commission of Conservation summed up the destructive nature of steam transport in the North:

> [A]s soon as the boat has loaded up [refueled] and forced draught is put on in order to get the boat off shore numerous incandescent fragments of cinders are vomited out of the funnels into the woods with disastrous consequences. Additional steamers are continually employed on these waterways, all of which requires large quantities of wood for their power. A new steamer . . . is operating on the Peace river this year which consumes no less than 2 cords of wood per hour.[38]

Besides the distressing wrack and ruin caused by steamer transport, forestry officials had some reservations about the effectiveness of the fire patrol boats. Department correspondence on the matter reveals two schools of thought: there were those who felt steam powered patrols represented the most efficient means of fire ranging, while others viewed a fleet of canoes as a more practical option. In 1915, E. H. Finlayson, then District Inspector for Alberta, expressed his concerns about moving to a greater reliance on canoes. In a letter to Campbell, Finlayson recounted that a fire ranger, previously employed by the DFB to patrol in the region, had spent much of the 1913 fire season making small excursions to visit friends in the "neighbourhood." Finlayson felt that even a more motivated ranger traveling by canoe could afford but little protection from fire and reminded Campbell that it was, of course, quite easy to go down the river in a canoe but coming up meant the laborious process of tracking.[39] Without canoes however, life for the rangers was difficult. Skiffs were found to be cumbersome and the fire patrol boat drew too much water, making it difficult for the men to go ashore.

The end result of the canoe-patrol boat debate was a coordinated system employing both modes of transport. In various forms, this remained the basis of fire protection services in the NWT for the next few decades. H. J. Bury, Timber Inspector for the Department of Indian Affairs, can be credited with outlining this systematic method of patrolling the region. Bury's plan established the canoe as the chief means of transport for extinguishing fires, with the patrol boats acting in an auxiliary capacity. Each spring, the rangers were to proceed to their respective territories with the fire boats meeting them on specific dates to dispense supplies and instructions. The rangers would move downstream by canoe and utilize the fire boat for moves upstream. In outlining the system, Bury summed up the objectives of fire protection services ever since:

> Celerity of movement is the essential thing in fire patrol. The important feature is to get around the beat as quickly as possible and consequently be on the scene of a fire before it attains serious proportions.[40]

Of course, successful implementation of the patrol system was dependent on its front line employees. The DFB had a constant problem enticing good men to become northern fire guardians. The job entailed a good deal of independence and isolation, with limited supervision. In 1912, H. A. Conroy, Inspector for Treaty No. 8, provided a typical description of the kind of man the DFB should employ:

> A fire-ranger in these northern districts must be able to speak the native languages, and must be an expert in a canoe and among horses. He must know a very large tract of country like a book, for on many occasions he is called upon to make long trips inland from the rivers, where there are no trails to follow or blazes to guide him.[41]

While records from the period reflect the understandable difficulty the DFB had in gaining the services of this sort of man, some solid individuals were hired to patrol the North. One particularly capable ranger was glorified in a *Saturday Evening Post* article:

> A thousand miles north of the British line one has seen a fire guardian, the only officer of his kind in a section of country hundreds of miles in extent . . . . A splendid, quiet, self-respecting chap this man was too . . . . One day during a steamer voyage this fire guardian saw smoke on the horizon far inland from the river on which we were travelling. He stopped the boat at once, got his pack together and went ashore. As he figured it out, this fire was forty miles away, probably at the edge of a certain large prairie surrounded by heavy woods . . . . All alone, a sturdy and self-reliant figure—representing the law, representing civilization even in the wilderness, representing a decent regard of organized society for the organized society that is to follow us—he set out on foot for his wilderness journey across an untracked country. In all of one's experience with outdoor men, rarely has one met a better, simpler and nobler figure than this one.[42]

The ranger's primary duty was to educate the northerners about the Dominion fire regulations. Fire prevention was traditionally a more effective means of reducing annual area burned than was fire control. But introducing Dominion fire regulations—let alone enforcing them—was a delicate, difficult process. As we have seen, there were overt differences between how native northerners viewed fire and how it was viewed by those of European descent. Preventing anthropogenic fire in the North, like elsewhere, meant addressing the cultural environment in which the fires occurred. Traditional fire habits—campfires left to burn, smudges, burning for habitat modification, signal fires—had to be altered.[43] This was no easy mission as these practices were ingrained in northern society and reached back through millennia. The success of the rudimentary fire control system rested on the ability of government authorities to educate the scattered population that fire, deliberate or accidental, was a destructive element.

Frontier justice was shunned by Mackenzie District personnel who proved to be a rather flexible lot. The rationale for punishment was summed up by a ranger after he had investigated some man-caused fires during the 1915 season: "The penalties imposed in the cases tried were light, and the object was rather to prevent carelessness for the future than to punish for the past."[44] The popularity of moral suasion over more stringent measures was in part due to the fact that many seasonal rangers made their homes in the area and could ill-afford to have themselves ostracized in an environment where one's survival could depend on the goodwill of neighbours. There was also the matter of retaliatory fires. Since the extensive forest frontier often made it impossible to locate the parties responsible for starting fires, any individual unhappy with enforcement officials or policy could go about touching off fires, safe in the knowledge that he would probably never be caught. Rangers toyed with various ideas to counteract this type of maliciousness: informants could be offered rewards, drastic examples could be made of those convicted, and some thought was even given to tailing potential lawbreakers at the start of each season.

Introducing the will of Ottawa's forestry officials in the faraway Mackenzie District was certainly a complex matter as is evident by the comments ranger T. W. Harris offered his supervisors in 1915:

> The Indians do not show any active ill-will towards the action of your Department, but with native cunning they would like to make their compliance with the law, a source of profit to themselves, and the "Barrack-room lawyers" among them tell the ranger when warned about fires, that if the Government wants them to obey, that they must be fed. Of course, this is mere bluff, and there is absolutely no danger of these poeple(sic) ever committing any overt act in contavention(sic) of the law, as they are far too much wanting in energy and in initiative to do so. When any remarks have been made to me on the this subject of the Government's prohibition to the Indians, before acquiring the country by Treaty, I have replied that the prohibition was not to the Indians at all, but applied to everyone, and was for the benefit of the country.[45]

Harris was able to report a much improved situation the very next season. He felt inhabitants were already taking more care in extinguishing fires, "and the more intelligent among the Indians, are beginning to be convinced that the preventative measures . . . are for the good of their country, and are willing to co-operate with us if they can do so without too seriously compromising themselves with the other Indians."[46] In 1919 surveyors returning to the Mackenzie region after a long absence noted that "the waste by fire is by no means as great now, and the natives are being educated to see the folly of allowing fires to spread."[47] That such apparently good results could be attained so soon after Government representatives moved into the area is astonishing.

III

Fire prevention and fire control were not the only conservation efforts made in this era. Until wildlife protection in the NWT was placed under the charge of the Parks Branch in 1917, officials of the DFB, with the help of the RNWMP, were given the chore of investigating the Mackenzie District's wildlife resources. The use of the DFB's men for other conservation matters was certainly a prudent way to stretch Department of the Interior funding and energy, but it also made sense in scientific terms. In fact, the 1910-1920 period can be viewed as one of the most enlightened in terms of conservation and government organization that the NWT experienced. With the same officials looking after both forest and wildlife protection, the critical link between fire, habitat and wildlife populations had a chance to become well established. Unlike other regions in Canada, fire protection policy in the NWT during this century was shaped to a large degree by the necessity of maintaining animal habitats, and in so doing, native northerners' ability to live off the land. So, while the linkage between forestry and wildlife in the early era had little tangible influence on forest protection policy, the contemporary evolution of the two interests within separate agencies has certainly not been to the advantage of northerners or, for that matter, the federal government.

The most notable legacy of wildlife conservation in the Mackenzie District is Wood Buffalo National Park. The DFB's involvement in the establishment and administration of the Park can be traced back to 1911, when the DFB was given the responsibility of protecting what was the last wild herd of Wood Bison in the country. For the most part, protecting these animals meant locating and extinquishing fires throughout their range, but forestry personnel also carried out some of the first buffalo research projects. Earlier investigations by the RNWMP had pointed to hunting and wolf predation as factors in a declining herd population, but it took a more comprehensive study in 1911 by the men of the DFB before conclusions and recommendations could be offered. Working out of the Office of the Government Agent in Fort Smith, the "Buffalo patrols" revealed little proof that wolves had an effect on the population, and found that the natives were too afraid of the RNWMP to kill the animals.[48] For the next six years, the DFB continued with investigations of the bison range and made various plans to save the herd. Moreover, R. H.. Campbell maintained the reduction of fire damage on the herd's range as a priority.[49]

The issue of Wood Bison preservation precipitated the fateful division of forestry and wildlife administration in the southern portion of the Mackenzie District. The Parks Branch jealously viewed the fact that game preservation in the area was being handled by forestry officials. In 1914 the Parks Commissioner went so far as to imply that his branch should be given sole responsibility for game throughout the whole of the NWT.[50] Campbell on the other hand, felt that the management of wildlife should be a forestry responsibility since game was a product of the forest environment, and more pointedly, he stated that foresters were better trained in game protection than members of the Park Branch.[51] In 1917, after four years of interdepartmental bickering it was decided to put all wildlife protection in the NWT under the control of the Parks Branch. Historian Janet Foster correctly views this decision as critical in giving wildlife protection policies in Canada some much needed strength.[52] But, without the constant support of forestry officials, the Parks Branch would have had more limited success in the North. Long after the 1922 creation of Wood Buffalo Park, the DFB would spend a significant amount of its time administering the Park's forest environment.

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[1] Theresa Ferguson, "In Search of the Elusive: Traditional Native prescribed Burning in the Northeastern Wood Buffalo National Park Area," (unpublished discussion paper, 1988), p. 5.

[2] National Archives of Canada, Record Group 85 (Northern Affairs Program Records), vol. 754, "Extract from T. W. Harris' Annual Report for the season of 1915 for the Mackenzie River Fire-ranging District," 7 March 1916.

[3] See, D. J. Hall, *Clifford Sifton, Volume Two, A Lonely Eminence, 1901-1929,* (Vancouver: University of British Columbia Press, 1985), p. 249-250.

[4] Gillis and Roach, *Lost Initiatives*, p. 189.

[5] Ibid., p. 191.

[6] Ibid., p. 197.

[7] It should be noted that until 1901 Stewart's post was that of Chief Inspector of Timber and Forestry under the previously established Timber and Grazing Branch. The Forestry Branch grew out of the Chief Inspector's office in 1901. For consistency's sake, the title ' Dominion Forestry Branch' (DFB) has been applied to Stewart's earlier post.

[8] *Canadian Sessional Papers (CSP)*, 1900, no. 13, p. 5.

[9] Ibid., p. 11.

[10] Ibid., p. 9

[11] *CSP*, 1901, no. 25, pp. 5, 7.

[12] Ibid., p. 7.

[13] Murphy, *History of Forest and Prairie Fire Control*, for regulations, p. 111; rangers 106-123 passim.; railways, p. 118.

[14] *CSP*, 1903, no. 25, p. 3.

[15] *CSP*, 1905, no. 25, p. 8

[16] See Canadian Forestry Association, *Report of the First Annual Meeting* (Ottawa, 1900 [repr. 1975]).

[17] For a summary of CFA founding, see Gillis and Roach, *Lost Initiatives*, pp. 56-58.

[18] Canadian Forestry Association, *Report of the Canadian Forestry Association Convention* (Ottawa, 1906); see Stewart's comments, pp. 27-30. Representing the Mackenzie district at the 1906 convention was F. D. Wilson, Vice-president of the CFA, and a resident of Fort Vermilion, Alberta.

[19] Ibid., pp. 27-28.

[20] Ibid., p. 31.

[21] Ibid., p. 32. Bell went on to say that he often made speeches to Indians urging them to protect the forest: "They [Indians] have told me 'we are doing you a service by scorching the trees and making plenty of dry wood for your camps.' I think we should discourage the starting of fires by Indians by some means such as withholding treaty money from those who willfully set fire to a forest. On the other hand they might be rewarded for putting out fires. They sometimes do that in any case. A good Indian, when he finds a fire burning will endeavour to put it out."

[22] Ibid., p. 29.

[23] Stewart was apparently joined on his journey by Thomas Anderson, Chief Inspector for the Northern or Mackenzie River District, and the region's first government official responsible for forestry matters, see *CSP* , 1907-1908, no. 25, Appendix No. 11, p. 22.

[24] Ibid., p. 33.

[25] Ibid., p. 8.

[26] A standard summary of the Canadian Commission of Conservation can be found in, C. R. Smith and D. R. Witty, "Conservation, Resources and Environment: an Exposition and Critical Evaluation of the Commission of Conservation," *Plan Canada* , vol. 11, no. 1 (1970), pp. 55-71, and vol. 11, no. 3 (1972), pp. 199-216.

[27] H. V. Nelles, *The Politics of Development: Forests, Mines & Hydro-Electric Power in Ontario, 1849-1941* (Toronto: Macmillan, 1974), p. 184.

[28] For essays summarizing the nineteenth century development of natural history and theology, see Carl Berger, *Science, God and Nature in Victorian Canada: The 1982 Joanne Goodman Lectures* (Toronto: University of Toronto Press, 1983).

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[29] D. J. Hall, *Clifford Sifton, Volume Two*, pp. 52-57.

[30] See Zaslow, *Opening*, p. 242.

[31] See for example, Murphy, *History of Forest and Prairie Fire Control*, p. 150. The first chapters of this study deal to some extent with the problems faced by settlers on the relatively treeless western plains.

[32] Historical information on the numerous northern conservation programs is provided by Janet Foster, *Working for Wildlife* (Toronto: University of Toronto Press, 1978).

[33] Murphy, *History of Forest and Prairie Fire Control*, p. 144.

[34] NAC, RG 39, vol. 104, Campbell to W. W. Cory, 13 May 1908.

[35] NAC, RG 39, vol. 262, A. J. Bell to Campbell, 6 November 1911.

[36] NAC, RG 39, vol. 104, G. Card to Edward Martin, "Letter of Appointment", 9 August 1915.

[37] NAC, RG 39, vol. 262, Connor to Bell, 3 October 1913.

[38] Ibid., H. J. Bury, "Conservation of Timber in the Province of Alberta and the Northwest Territories," p. 3, undated [1917].

[39] NAC, RG 39, vol. 104, Finlayson to Campbell, 27 April 1915.

[40] NAC, RG 39, vol. 262, H. J. Bury, "Conservation," p. 4, undated [1917].

[41] *CSP*, 1913, no. 18, p. 76.

[42] *Saturday Evening Post*, n. d., as quoted in *CSP*, 1912, no. 25, p. 16.

[43] Pyne, *Fire in America*, p. 161. An entertaining account of fire prevention in America is provided, pp. 161-180.

[44] NAC, RG 85, vol. 754, "Extract from T. W. Harris' Annual Report for the season of 1915 for the Mackenzie River Fire-ranging District," 7 March 1916. Another example of leniency is provided in the same volume by ranger Clarence Stevenson, *Individual Fire Report*, 13 June 1917. Stevenson reported that the fire, located at the confluence of the Liard and Necla Rivers, was caused by Trout Lake Indians who, after killing a moose, lit a fire to call other Indians there. Catching up to the hunting party later, Stevenson simply "warned them not to light call fires again & had no more trouble after with them." The historical record for much of this century points to Moose call fires, and Moose hunters in general, as one of the most notorious sources of anthropogenic fire in the NWT.

[45] Ibid.

[46] NAC, RG 85, vol. 754, "Mackenzie River Fire-Ranging District. Season 1916. Annual Report of T. W. Harris, C. F. R.," n. d. In 1922, Harris suggested that the only Indians still routinely causing fires were those furthest from the settlements and perhaps less aware of the regulations: "Treaty was made with the Indians of this District for the first time last summer(1921), and some Indians came from far off sections, and to them may probably be attributed the fires which were not extinguished." From, "Annual Report of T. W. Harris, C. F. R. for 1921."

[47] C. Camsell and M. Wyatt, *The Mackenzie River Basin* (Ottawa: King's Printer, 1919), p. 48.

[48] Janet Foster, *Working for Wildlife*, p. 111. For the 1911 report, see, *CSP*, 1913, No. 25, pt. 6, "Report of Geo. A. Mulloy", pp. 131-144. It is interesting to note that Mulloy and his assistant lacked accommodations upon arriving in Fort Smith to carry out the Buffalo survey. Consequently, the two men erected one of the Department of the Interior's first buildings in the NWT.

[49] For example, see, *CSP*, 1916, No. 25, pt. 6, pp. 30-31.

[50] Foster, *Working for Wildlife*, p. 117.

[51] Ibid., p. 116.

[52] Ibid., p. 119.

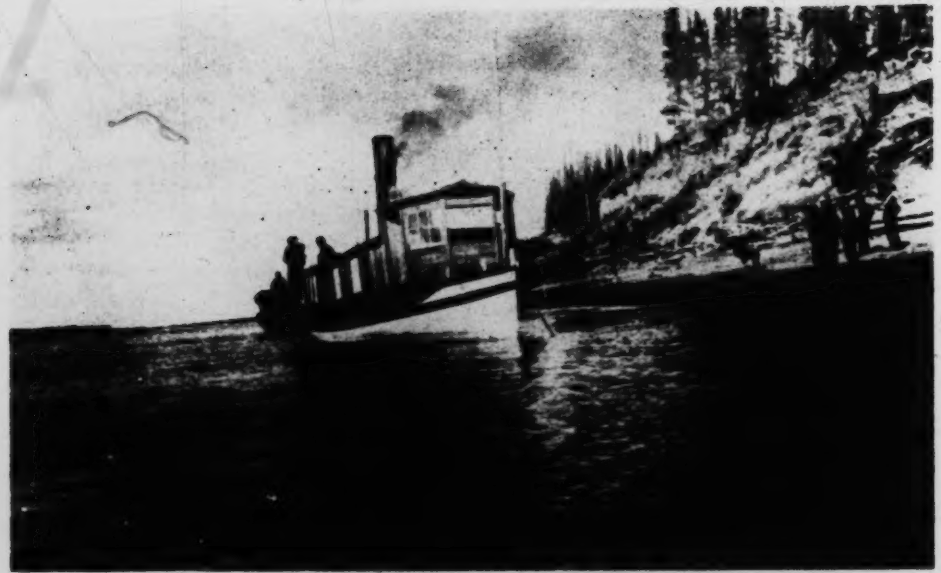

Figure 3.1. Fire patrol steamer *S.S Hope* on Slave River, 1916.
(J. A. Doucet)

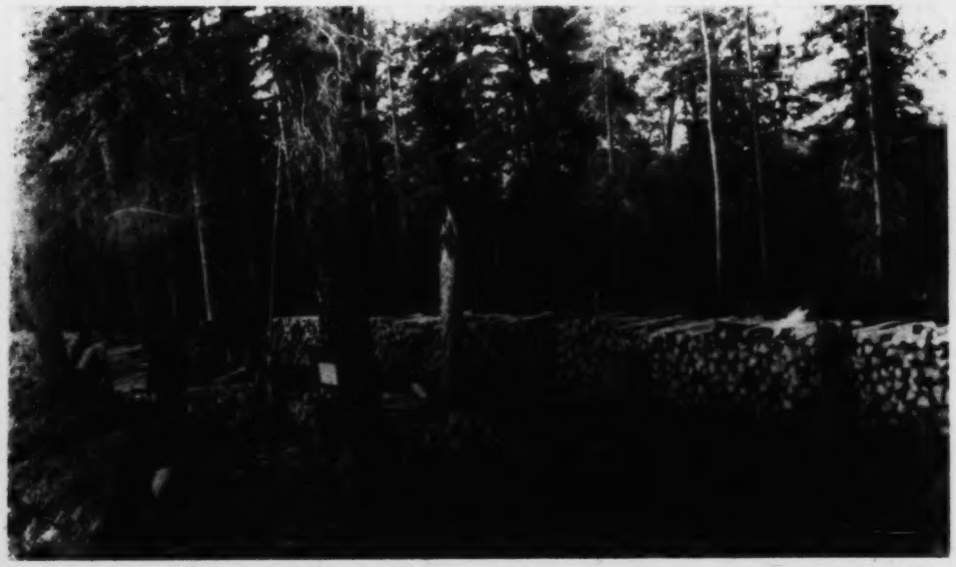

Figure 3.2. On the banks of a northern river, fuel is readied for steamboat boilers, 1917. (H. J. Bury)

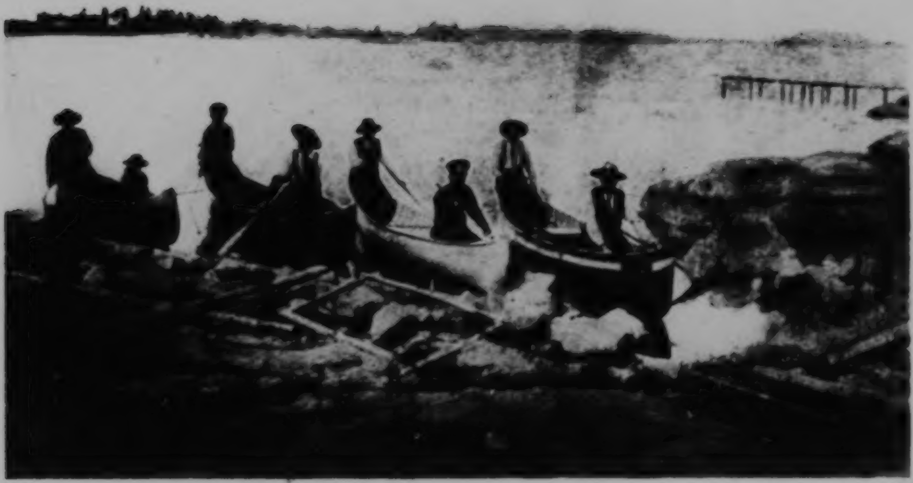

Figure 3.3. Group of northern Forest Rangers near Norway House, Manitoba, 1913. (A. Knechtel)

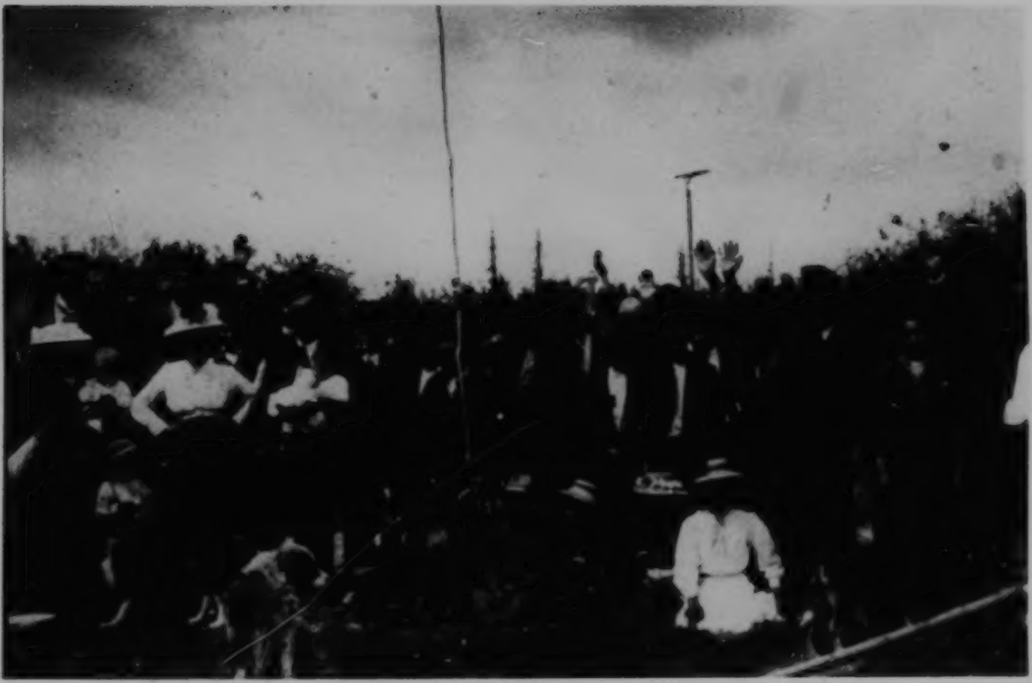

Figure 3.4. Northern Indians pledging to honour fire regulations at Fort McKay, Alberta, c. 1915. (n. doc.)

CHAPTER 4

Fanning Northern Flames: Development and Disinterest in the NWT, 1920-1950

> Much of the best forests of the region . . . have been destroyed by fires over the decades, notably in places and at times of active prospecting and settlement. Thus the forests of Omineca and Cassiar suffered in the 1870's, those of northwestern Alberta during and after the Klondike gold rush, while in the district of Mackenzie the heaviest destruction appears to have come since the middle 1930's. —Morris Zaslow, "The Development of the Mackenzie Basin, 1920-1940."[1]

> My impression of the Mackenzie District is that it is likely to offer some fire protection problems that will be more or less unique. —Harry Holman, Dominion Forest Service, 1943[2]

During the years 1920 to 1950, the urge to advance systematic fire protection in the NWT was as spasmodic as the rolling back of the resource frontier itself. This tendency was a reflection of public and private development interest in the North during the same period. The external forces (such as conservationists and foresters) that had previously pushed fire control programs into the Mackenzie District became increasingly impotent as the harsh realities of political disinterest and economic retrenchment surfaced; as well, the conservation movement had run its course by the 1920s, and Dominion foresters became increasingly preoccupied with the reduced status of their national operation in light of the National Resources Transfer Acts of 1930. Consequently, until the 1940s, frontier fire protection remained a peripheral concern. To fully understand the dynamics of the era's protection policy it is necessary to chart the evolution of the labyrinthine bureaucracy controlling northern affairs. Much as the NWT's earliest fire operations rested on the fate of the DFB and the conservation movement, protection after 1920 became closely linked with broader federal activities in the North.

From the outset, the intensity of fire protection roughly paralleled economic interest in the area. An oil strike at Fort Norman in 1919, for example, caused a relatively greater concentration of administrative power in the Mackenzie District that briefly enhanced fire protection efforts. The creation of the Northwest Territories and Yukon Branch (NYB) within the Department of the Interior in 1922, enhanced government supervision of many activities on the frontier, but in the case of forest protection, the NYB spelled trouble. Soon after, responsibility for territorial fire ranging devolved from the DFB to the NYB and forest protection quickly became lost among a myriad of other government responsibilities. By 1930 the new agency had undone much of the DFB's work. For the next twenty years the RCMP would play a more central role in fire protection than would experienced seasonal rangers. Until the postwar arrival of a strong federal presence in the NWT, Ottawa's progress in implementing fire control was wholly inconsistent.

I

Although the DFB had attended to the Mackenzie and Slave Districts since 1911, there was little support for their activities within broader government circles during the interwar period. It is not surprising that wildfire in the NWT was a concern to so few outside the DFB. In fact, as late as 1920, some Members of Parliament were still ignorant of where the area embracing the NWT was. On one occasion Arthur Meighen, then

Minister of the Interior, felt compelled to explain: "The area is two-fifths of the whole area of Canada and a rich territory it is," adding that, "The time will undoubtedly come when it will be a prized portion of the Dominion."[3] While the 1920s saw fleeting curiosity and control on the part of Ottawa, fire in the North had yet to become an issue.

At the same time, Dominion forestry officials were fighting to intensify fire protection in the more isolated forests. They viewed the extension of protection as both necessary and inevitable; moreover, DFB Director, R. H. Campbell had grown accustomed to a constant expansion of operations. This was only natural, since from 1910 to 1920 the DFB's appropriations had risen from $200,000 to over $800,000.[4] As was common to all forest protection organizations, a disastrous fire season presented officials with the best justification for bolstering their programs. The heavy fire season of 1919 is a case in point. Although the Mackenzie region had few fires that year, over seven million acres may have burned in eastern Alberta and Saskatchewan.[5] All the fire action strained the energy of DFB staff and, Campbell complained, "made clear what has been known all along, that in a dangerous season the patrols of each fire ranger are too extensive for safety and that a much larger staff is urgently required."[6] Nowhere was this point better exemplified than in the NWT where patrol routes were commonly a hundred miles or more.

Campbell's men continued to address such logistical problems. By 1921, E. H. Finlayson, then inspector of fire ranging, had reorganized much of the DFB's work on the forest frontier, including the NWT's patrol system.[7] Rangers working out of Fort Smith had previously been supervised by that settlement's Government Agent. But Finlayson's arrangement bypassed the Agent altogether and Chief Rangers in northern

Alberta began to directly supervise the handful of patrol routes along the Slave River and Great Slave Lake.[8] The goal of the revamped system was to enable more consistent communication and to reduce the patrol overlap on the upper Slave. Further north, the Government Agent's office in Fort Simpson remained in charge of the men covering the Mackenzie River valley. This section of NWT forest was still not a great concern to DFB officials and all efforts there were characterized as educational. It was hoped that the very existence of an organized force of rangers would help prevent serious fires until more intensive and better equipped fire operations could be carried out.[9]

Largely due to the organizational talents Finlayson displayed in the prairies and the NWT, he moved quickly through the ranks and, in 1924, took over from R. H. Campbell as Director of Forestry. No longer able to personally monitor frontier fire protection, Finlayson felt it wise to give control of the Mackenzie District to the young NYB.[10] His attempts to bring greater order to the district's patrol system had failed. Finlayson blamed the muddled situation on the "remoteness of the location and the lack of mail and transportation facilities."[11] Department of the Interior correspondence from 1921 to 1923, clearly indicates a confused state of affairs. Patrols, particularly in the Wood Buffalo Park region, were again overlapping, and there was some question as to which department agency should pay for protection in and around the Park: the NYB, the DFB, or the Parks Branch.[12] Consequently, in the spring of 1924, the transfer was completed and all equipment and files pertaining to the Mackenzie District were transferred from the District Inspector's Office in Calgary to Fort Smith.[13] To secure an end to the duplication of services in the area surrounding Wood Buffalo Park, northeastern Alberta, and the NWT, game wardens working out of Fort Smith were authorized to extend the southerly portions of their patrols to the natural boundary formed by the Peace and Slave Rivers.[14]

Although the NYB continued to administer fire and game patrols in the Park after 1924, fire ranging all but ended in the NWT. Ironically, the man charged with the duties of Chief Fire Ranger for the Mackenzie District in 1924, John A. McDougal, had hastened to put an end to the fire protection work in the NWT a year earlier:

> In my opinion it is a waste of money to carry on the fire ranging system on a scale carried on during the past few years. Owing to the vastness of the District, unless a fire ranger was fortunate enough to be at the spot when a fire started or to arrive in time to prevent it spreading, he would have difficulty securing assistance to fight a fire owing to the scarcity of the population.[15]

Almost immediately after the DFB relinquished control of fire protection in 1924, McDougal took action and dispensed with much of the already small operation working downstream of Fort Smith. The Mackenzie River fire program was halted and rangers working out of Fort Simpson were let go. The NYB justified these actions by insisting that timber resources were not of sufficient value to warrant the expense of patrol work. Going further, McDougal intimated that the cuts were supported by a great many northerners.[16] But a less principled rationale was at work; McDougal wanted to safeguard the NYB from the cost of maintaining a fire ranging system along the lines of that implemented by the DFB.[17] From 1925 to 1943, the entire system was discontinued. And so, for that eighteen year period, the RCMP, acting as ex officio fire guardians, offered what meagre fire protection they could when not busy with police work, such as organizing fire action near settlements, and enforcing fire regulations.

Although NYB officials in Fort Smith successfully rid themselves of fire duties in the NWT, they continued to supervise the operation in Wood Buffalo Park.[18] In the latter part of the 1920s, that entailed a great deal of work. Serious fire seasons beset the Mackenzie region in 1925, 1927, and 1929. In each of these years the Fort Smith office had to mount rather extensive suppression operations in and around the Park. The Crane Lake fire of 1925 kept a crew of14 men busy for more than three weeks.[19] In 1927 substantial fires burning throughout the area south of Great Slave Lake brought a barrage of excited wireless messages to Department of Interior personnel in Ottawa; one estimated a fire in the vicinity of Fort Fitzgerald at 30,000 acres.[20] The Park fires of 1927 demanded action if not retribution. O. S. Finnie, director of the NYB, outlined his position on the latter point for Finlayson's consideration: "We know that certain Indians and half-breeds are the only trappers within the Park . . . . it might be advisable to take steps looking towards (their) exclusion from the Park, as well as white people."[21] The situation was worse in 1929. A fire covering an area of twenty square miles came within twelve miles of Fort Smith, and one of several conflagrations in the Park, the Murdoch Creek fire, burned over 200,000 acres, obviously exciting Warden D'Arcy Arden. "The whole country is on fire" Arden reported, adding that the "fire came like hell."[22] Civilians were alarmed as well. A spokesman for Western Canada Airways was shocked to report that the south end of the Park was nearly all burned away.[illegible] The ramifications of what many perceived as a negligent protection policy also found their way onto the pages of the *Edmonton Journal* : "The government has a large crew to fight the fire that is in the Buffalo Park, but the fires outside the park are left alone, which will seriously hurt the next few years' fur catch. Most of the hunters are in from the bush with very small catches. All report fires all over the country."[24]

In light of the heavy fire years, the cutbacks to the rudimentary fire program were anything but timely. Not surprisingly, Finnie and his men decided to reverse their tack. In 1929 they approached the Department of Interior for financial support to rebuild the fire ranging system.[25] Funding increases, however slight, were unusually difficult to obtain in the 1930s. The depression had forced the government to slash public administration budgets and few activities were as vulnerable to the cuts as fire protection. The reduced involvement of the Forestry Service (DFS, and the DFB's official name after 1930), and its almost complete demise after 1930, did little to help the effort to revitalize fire operations in the NWT. The transfer of natural resources to the western provinces combined with the budget tightening devastated the DFS. By 1933, the program had been cut to a third of its 1924 operating level.[26] With the reductions to the DFS, frontier fire protection lost its greatest advocate. Support for forest conservation had dwindled throughout Canada since the mid-1920s and was one of the first victims of economic retrenchment.[27] In the political and economic milieu of the 1930s, there was little opportunity for an expansion of fire protection services.

Attempts to gain increased funding were certainly nothing new. Justifying the cost of fire protection has traditionally been one of forest management's toughest tasks; protection is often seen as a frill and this was especially true in the NWT. It could not be rationalized and underwritten by timber production as it was elsewhere, nor did it parallel the relatively vigorous steps made by Ottawa to protect diminishing wildlife resources and the traditional trapping economy. During the 1930s the government made attempts to protect native's hunting rights, giving them preferred access to the game preserves established in the 1920s, while implementing new trapping legislation which, for example, regulated the number of white trappers.[28] At the same time, the government experimented with reindeer-herding, and pursued the development of a Canadian reindeer industry with the hope that it would provide the Inuit with an alternative to the dwindling number of wild animals. By 1935, a herd of 3,000 Alaskan reindeer was established at a reserve in the Mackenzie Delta. Driven to the Delta from Seward Peninsula over a five-year period, the reindeer covered some 2,500 kilometres.[29]

At first glance it seems odd that the intensification of the conservation effort was not matched by a strengthening of forest protection. It was, however, only natural for the government to take a stronger approach to protecting game than it did to protecting forest habitat. Wildlife programs were more easily justified given that the fur trade was still the most important northern industry. Moreover, it took comparatively fewer dollars to herd reindeer, set aside game preserves, and tighten harvest regulations, than it did to mount a serious fire operation.[30] Wildlife conservation made some economic and political sense, fire control did not. In the 1930s, fire only merited attention when it threatened to impede industrial development and, unlike most of North America's forested areas, there was little demand for protection from local inhabitants. Although northerners have since generated broad support for the idea of fire exclusion, their interests during the interwar years lacked definition. It is quite probable that natives in the NWT viewed fire protection as a positive step in that it would halt wholesale destruction of the forest and provide much needed seasonal employment. Until the postwar era, however, many northerners maintained traditional fire practices, and a belief in the positive role played by fire in providing a diverse habitat. Prior to the 1950s, the absence of a local demand for fire protection gave the government little reason to act.

When related to general government activity, the neglect of northern fire protection seems unexceptional. Throughout the interwar period, the administration of northern affairs was as disinterested as it was complicated. Economic retrenchment and the transfer of resources initiated a reorganization of the entire Northern administration. In 1931, the NYB was abolished and responsibility for the territories was briefly given to the Dominion Lands Board—later entitled the Lands, Northwest Territories and Yukon Branch—under the Department of the Interior. In 1935, austerity measures coupled with reduced responsibilities, resulted in the termination of the Department of the Interior, which was then amalgamated with three other government departments to form the Department of Mines and Resources (Figure 4.1). The department was divided into five branches and existed until 1949. The Lands, Parks and Forests Branch (LPFB) administered the new bureau of NWT and Yukon Affairs, and the DFS (Figure 4.2).[31] Both agencies were involved in the postwar evolution of forest management in the NWT.

II

Of course, the ebb and flow of fires continued regardless of administrative change. The flow was particularly pronounced and reflected a surge in the number of fires generated by man. Mining activity beginning in the 1930s, wartime projects, and the mobility offered by aircraft, influenced the pattern and frequency of forest fires in the NWT. These developments acted as a catalyst, bringing the specialized talents of foresters back to bear on the frontier fire problem. In 1941 the DFS listed aerial fire protection in the NWT as an "essential requirement" for Canada's forestry program.[32] The Canol Pipeline, initiated in 1942, presented perhaps the best single reason for renewing a more systematic approach to forest protection. The influx of American military forces working on the pipeline and smaller projects, brought dramatic and often unique fire hazards into the northern forests. By the end of the war it was evident that huge, uncontrolled fires were more than a menace to riverways and settlements, they also threatened the hope for a major industrial infrastructure in the subarctic. For example, a semblance of protection was needed before resource extraction companies could comfortably invest in an operation. Adjacent lumber supplies were becoming increasingly precious, especially in the case of mining where hauling the necessary timbers any substantial distance was an expensive proposition. Essentially, northern development had a twofold effect on the implementation of more intensive fire protection: it made the need for forest protection greater while simultaneously introducing an array of new ignition sources.

Pressure to act on the new fire problem brought about by changing conditions mounted again in the late 1930s. The era's rash of bad fire seasons was well documented in southern newspapers. During the summer of 1939 *The Edmonton Journal* carried no less than five different articles devoted to fires in the NWT.[33] Western Canadians demanded explanations as palls of smoke emanating from the North frequently filled the sky, obscuring the sun and grounding air traffic.[34] Scientists were also concerned. A paper presented at a meeting of the Federation of Ontario

Naturalists in 1941 deplored the "inadequate fire control in the Mackenzie Basin" and stated that besides the effect on wildlife, the fires endangered settlements, ruined valuable timber, and increased the hazard of flying because of heavy smoke conditions.[35] In 1942, Dr. C. H. D. Clarke, a biologist with the Dominion Wildlife Service, deemed the number of fires that summer and their influence on wildlife populations as "disastrous." He counted no less than 12 large conflagrations along the main river system.[36] Dr. Clarke recounted the severe fire seasons that prevailed in the Mackenzie District from 1937 onwards to support his theory that the woodland caribou of the southwest NWT was in danger of extinction as a result of burnt rangeland.[37]

Naturally, HBC officials shared a similar view. Government inaction coupled with the purported carelessness of the natives, intensified their frustration. In 1938, the HBC strongly suggested that the laws regarding fire be better enforced.[38] But the most influential criticism probably came from the rapidly expanding mining community. Mining was quickly displacing fur as the primary industry in the NWT. The Department of Mines and Resources had an obvious interest in keeping the mining developers content and went to some trouble to reassure them that a reliable source of local timber existed.[39] Following devastating timber losses near Great Slave Lake in 1944, the reassurances had apparently worn thin.[40] An article in *The Northern Miner* expressed serious reservations about the viability of the NWT's forest supplies: "The loss of such timber in an area that could be easily patrolled by aeroplane is a rebuke to the administration,"and concluded that, "having in mind the ultimate demand which is certain to develop for mine timbers . . . the government should commence immediately to provide the necessary equipment and organization to promptly deal with fires as they arise next year."[41]

That conflagrations were a menace to mining properties was not lost on the government. As early as 1939, the Director of the LPFB, R. A. Gibson, acknowledged the problem but reminded his charges that that there were "no funds available for extensive activities . . . in fact we are right now in the position where we will have to ask for additional funds on account of expenditure made on fire fighting to date." Gibson further rationalized the sorry state of northern fire protection by comparing it with that offered in the provinces where, "on account of limited funds, protection is restricted to the timber of established value."[42] Taking a different approach, the administration in Fort Smith defended the impotent protection efforts by reasoning that the fire difficulties arose from the activities of the very people most willing to criticize: careless prospectors—some of whom intentionally set fire so as to expose rock formations; Indians, who resented the fact that development was taking place on native game preserves; mining companies that desired fire-killed wood as a form of cheap fuel; and aircraft companies that set fires in the hopes of drumming up business.[43] Whether or not the bulk of fires could be attributed to these agents, government officials were certainly aware that the fire problem was aggravated by development.

The unsubstantiated claims regarding the influence of aircraft were not completely out of line. The evidence does tend to suggest that the pattern and frequency of ignition was altered by the arrival of aircraft. Enhanced mobility has always bedeviled fire protection agencies. Air transportation helped access remote areas, thus spreading anthropogenic fire more widely across the northern landscape. This trend was so noticeable in the early 1940s, that officials attempted to ban planes from Wood Buffalo Park.[44] The most curious example of fire caused by aircraft manifested itself during the war years when otherwise inexplicable blazes began popping up beneath regular flight paths. It was felt that firebrands (cigars and cigarettes) dropped from large military transports were igniting the fires. Harry Holman, a Dominion Forester who surveyed the NWT's fire situation in the early 1940s, was convinced that many of the worst and most inaccessible fires were due to "*the practice of throwing cigar butts from aircraft*."[45] Holman was not alone. T. F. Blefgen, Director of Forests in Alberta, advanced the idea in 1942 after a string of fires started in the Lesser Slave Forest coincided perfectly with a radio beam corridor used by aircraft headed for the Yukon and Alaska.[46] Blefgen made reference to tests carried out in the United States which found that "a cigar butt would be alight on reaching the ground from a height of seven thousand feet."[47]

While fires may have become more frequent with the advent of air travel, they also became more noticeable and much easier to control. The suitability of aircraft for fire work quickly overshadowed any negative influence. Air-power, an integral part of fire operations worldwide, has been especially critical in hurrying the evolution of northern fire protection.[48] Few places on earth have such an impenetrable expanse of forest, where land dwarfs transportation corridors so absolutely. The use of aircraft had two very different influences on the postwar resurgence of fire protection. The primary effect was certainly the plane's ability to detect and help suppress fires. Fire detection in the NWT has traditionally been a matter for aircraft. Lookout towers came slowly to the region and as yet cover only a few southerly sectors. Another, more subtle influence was also at work; a growing reliance on air transportation made large-scale conflagrations all the more undesirable. As we have seen, smoke conditions often grounded flights, playing havoc with the air industry and drastically reducing the mobility of northern developers and administrators. And so, at mid-century, a marriage of convenience took place in which commercial flights would serve as the LPFB's eyes, in return for the an assurance that attempts would be made to keep the skies relatively smoke free.[49]

The carelessness of the U.S. military finally awakened the government to the necessity of fire protection. Although the NWT's forests were safely beyond the environmental devastation inflicted along the Alaska Highway corridor, they did suffer at the hands of the thousands of American military personnel and contractors associated with the construction of the Canol pipeline, the air staging route, and various exploration projects. One observer commented that "it seems to be the opinion of the troops to let the country burn, it's no good any way."[50] The fires generated during the war years were serious enough to merit ministerial attention. The Hon. T. A. Crerar, Minister of Mines and Resources, took the matter up with his American counterpart in 1943, reminding him that "the only force available to suppress fires started along the transportation routes is that controlled by the United States engineers."[51] As was by now tradition, the Mackenzie and Slave River valleys absorbed the brunt of the damage. Many of the fires were attributed to American troops "travelling in power boats and pontoon barges" making "cooking fires and mosquito smudges on shore."[52] The growing frequency of ignition combined with dry seasons to burn huge areas (figure 4.3). In 1942, one of the biggest fires ever recorded in North America originated from unburnt slash piled along the Alaska highway in the southern Yukon. The fire covered some 30,000 square miles, burning as far as the Mackenzie River, which it reportedly jumped near Fort Simpson.[53] Besides the obvious environmental impact, the extensive burns delayed wartime projects. While visiting the region in 1942, Malcolm Macdonald, United Kingdom High Commissioner at Ottawa, reported that the fires posed significant transportation difficulties:

> This has been a remarkably dry season in the north, so fires galore are raging. Consequently, a thick pall of smoke, as dense as a bad fog, has hung over the whole country between Edmonton and Great Slave Lake week after week, at a time when air and river transport is usually very active. For long periods every aeroplane in the place has been grounded, and small craft like scows have been tied up. The pipe and much other important equipment got stranded hundreds of miles south of where it was needed.[54]

By the end of the 1943 season the government took its first steps towards establishing a fire protection agency for both the NWT and the Yukon. To draw up plans for the organization, the Department requested the services of Harry Holman, a Forest Officer with the DFS, who had made extensive surveys of the Yukon situation that summer. Holman proved to be an excellent choice. He quickly got a firm grasp on the essential requirements and was praised for the "concise and impartial manner"with which his observations were presented.[55] At the outset Holman realized that the blanket coverage offered to well timbered portions of the country was out of the question. "At the same time," he added, "we have got to recognize that something must be done, and at once, if we are to hold down losses even to what they have been. With each added activity in the north, the danger mounts."[56] His statement effectively recapitulated the fire history of the NWT since 1930.

In making his plans, Holman travelled some 11,500 miles of the NWT over the course of two summers. His reports were remarkably comprehensive, and included sections devoted to fire incidence, settlement protection, forest values, causation, policy, detection, communication, equipment, and all-important cost estimates. The main thrust of Holman's reports laid bare the essentials required to "practically eliminate all large fires in the vicinity of the waterways, and at the same time prevent many bad fires from developing in the hinterlands; even though the degree of protection afforded the latter areas would be of a very sketchy nature."[57] With the objective made clear, Holman suggested an immediate capital expenditure in the NWT of $75,000 for equipment and buildings, followed by annual operating expenditures of $60,000.[58] A man of obvious conviction, Holman warned the department to take his recommendations seriously and took a potshot at the government's decimation of the Wildlife Service:

> I have not made these recommendations without considering them very carefully, and I may say at this point that if a policy of parsimony is adopted it is my considered opinion that it will entirely defeat the whole aim and purpose of the organization. I have seen such a policy in operation with a similar organization in the Territories, and I am not impressed with the results.[59]

With that said, the work of building a fire protection agency began in earnest. The 1924 devolution of fire protection to the North's administrators had had a tragic effect on the forests of NWT. The northward drift of industrial civilization generated an incredible flow of fire. It is ironic that industrialization was made vulnerable by the very fires it often produced. But nothing was threatened more than traditional native culture. Although the impact the increased fire frequency had on wildlife resources is impossible to gauge, it must have been dramatic. Fire protection and prevention would offer all industries, both new and old, a more stable resource base. While years of neglect had made the task of implementing a system enormous, there existed [illegible] wealth of experience into which administrators could tap. The NWT could build its organization by borrowing ideas from established agencies, supplanting them with the hard earned lessons only fire on the northern frontier could provide. Help was also forthcoming from the renewal of federal interest in the North. Wartime developments and postwar Soviet-American relations gave the region unprecedented significance and alerted Ottawa to the need for better monitoring of activity in the territories.[60] In so doing, officials came to realize that expanding development also entailed controlling fire.

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[1] Morris Zaslow, "The Development of the Mackenzie Basin, 1920-1940" (Ph.D. Thesis, University of Toronto, 1957), p. 309.

[2] NAC, RG 39, vol. 463, file 49983, "Forest Fire Protection in the Mackenzie District N. W. P. (sic)", 7 December 1943.

[3] House of Commons, *Debates*, June 8, 1920, p. 3281.

[4] NAC, RG 39, vol. 1, file 18374, Campbell to F. H. Lamor, 21 February 1921.

[5] Murphy, *History of Forest and Prairie Fire Control*, p. 207.

[6] *CSP*, 1920, No. 25, "Report of the Director," p. 12.

[7] For a brief summary of this work, see Murphy, *History of Forest and Prairie Fire Control*, p. 215.

[8] *CSP*, 1919, No. 25, Appendix No. 4, p. 54.

[9] *CSP*, 1920, No. 25, Appendix No. 4, p. 42.

[10] RG 85, vol. 585, file 577, Finlayson to O. S. Finnie, 27 March 1924.

[11] Ibid.

[12] Rg 85, vol. 585, file 577, Finnie to McDougal, 2 October 1923. Although this memorandum refers to the confusion surrounding only one fire in Wood Buffalo Park, the bulk of the file makes it clear that few officials understood the intricacies of the northern fire ranging operation.

[13] Ibid., J. F.. Moran to Finnie, 2 April 1924.

[14] Ibid., Finnie to D. R. Cameron, 3 May 1924.

[15] Ibid., extracts of a McDougal report in correspondence, Finnie to Finlayson, 14 August 1923.

[16] Ibid., McDougal to Finnie, 2 August 1924.

[17] Ibid.

[18] For an historical overview of Wood Buffalo National Park, see Barry Potyondi, "Dual Allegiance: The History of Wood Buffalo National Park, 1929-1965" (Parks Canada, 1981). The complicated history of the Indians, government, and commercial operations in the Park, can be found in P. A. McCormack, "How the (North) West was Won: Development and Underdevelopment in the Fort Chipewyan Region" (Ph.D. Thesis, University of Alberta, 1984).

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[19] NAC, RG 85, vol. 1397, file 441-5(1), McDougal to Finnie, 1 October 1925.

[20] Ibid., Finnie to Finlayson, 30 August 1927.

[21] Ibid. It is apparent that the government was coming under rather broad pressure to deal with these fires. For example, a letter on file from the Canadian Forestry Association, dated 9 September 1927, asked what provisions were being made for protection in the area.

[22] NAC, RG 85, vol. 1397, file 441-5(1), "D'Arcy Arden's Report from Rocky Point", June 1929.

[23] Ibid., W. L. Britnell to Finnie, 10 June 1929.

[24] *The Edmonton Journal*, 27 May 1929.

[25] In 1929 Finnie advised W. W. Cory , Commissioner of the NWT and Deputy Minister of the Department of Interior, that a number of game wardens and fire rangers were needed. As a start, the NWT Council decided to include the cost of only three wardens in the estimates for the fiscal year 1930-31. During the discussion of Finnie's recommendations it was pointed out that government expenditures in the NWT were already considered to be high. (NAC, RG 85, Vol. 585, file 577, Extract from Minutes of the Eleventh Session of the NWT Council, held on Wednesday, 6 November 1929).

[26] Gillis and Roach, *Lost Initiatives*, p. 227. An excellent account of the DFS's demise is provided, pp. 214-236.

[27] Ibid., p. 215.

[28] For an overview of the government's attempts at game conservation see Morris Zaslow, *The Northward Expansion of Canada, 1914-1967* (Toronto: McClelland and Stewart, 1988), pp. 139-146. Also see endnote 29 below.

[29] The evolution of the NWT's reindeer herds is summarized in Candace Loewen, "The Reindeer Experiment," *The Archivist* (Vol. 15-No. 5, September-October, 1988), pp. 7-9.

[30] It is interesting to compare the relatively serious wildlife conservation efforts during the interwar period with the flagging fire operation. For example, seven game preserves were set aside in the NWT for native northerners from 1918-1945, and the fur trade itself became increasingly regulated. The most comprehensive history of wildlife conservation in the NWT is, Jonquil Graves, "A History of Wildlife Management in the Northwest Territories," (n. p., 1988). Although devoted to the Yukon, Robert G. McCandless offers a unique and valuable survey in, *Yukon Wildlife: A Social History* (Edmonton: University of Alberta Press, 1985.)

[31] A comprehensive summary of the northern bureaucracy during the depression years can be found in Shelagh D. Grant, *Sovereignty or Security? Government Policy in the Canadian North, 1936-1950* (Vancouver: University of British Columbia Press, 1988), pp. 22-48.

[32] NAC, RG 39, vol. 26, file 49349, D. R. Cameron, "Forestry Programme for Canada: Essential Requirements," 7 January 1941, p. 2.

[33] See *The Edmonton Journal*, 1939: June 28, July 11, July 13, August 7, and August 18.

[34] One of many possible examples was provided by an article in the *Edmonton Bulletin*, 20 September 1938: "Flying hampered by pall of smoke extending from Edmonton to Fort Wrigley. Flying at a stand still between Edmonton and McMurray." Smoke could also upset river transportation, another article in the *Edmonton Bulletin* , 11 July 1939, reported that "traffic on Athabasca Lake, the lower Athabasca river and Slave river is tied up by the smoke." Aviation north of Edmonton was also halted in 1940. For example, see *The Edmonton Journal*, 3 September 1940.

[35] NAC, RG 85, vol. 1395, file 441-3, vol. 3, Memorandum Re: "Fire Protection, Mackenzie District and Wood Buffalo Park." 30 April 1941, p. 3.

[36] NAC, RG 85, vol. 1395, file 441-1, vol. 3-A, Dr. C. H. D. Clarke, "Forest Fires and Wild Life in the Mackenzie District 1942," p. 4. Interestingly, Dr. Clarke is one of the first public servants to attribute the increase in fires to the arrival of American troops in the NWT, see p. 2, "Forest Fires."

[37] Ibid., p. 4.

[38] NAC, RG 85, vol. 1395, file 441-1, vol. 2, HBC, Fur Trade Commissioner to R. A. Gibson, 26 September 1938.

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[39] For example, in 1938 the Commissioner of the NWT, Charles Camsell, was told to organize a survey of timber availability for the Canadian Institute of Mining and Metallurgy.

[40] Although the article does not cite specific fire sizes, it does say that "fires raged for days, practically unchecked" on the south side of Great Slave Lake.

[41] "Protect the Timber for Mines in the Territories," *The Northern Miner*, 2 November 1944.

[42] NAC, RG 85, vol. 1395, file 441-1, vol. 2, Gibson to Cumming, 30 June 1939.

[43] Ibid., "Extracts from the Minutes of the Ninety-sixth Session of the Northwest Territories Council held on 3rd July, 1939."

[44] Apparently, the "classical example" of many fires that occurred in the NWT in this era, were those left by trappers and prospectors hastily departing from their camps to catch flights out of the bush. Rather than chance being left behind, the men would often not take the time necessary to make certain all campfires were extinguished. In 1941, Dr. J. A. Urquhart, acting Superintendent of Wood Buffalo Park, suggested that Indians be prohibited from using aircraft in the Park. See, NAC, RG 85, vol. 1397, file 441-5, vol. 1, Urquhart to Gibson, 18 February 1941.

[45] NAC, RG 39, vol. 463, file 49983, "Forest Fire Protection in the Mackenzie District N.W.P. (sic)", 7 December 1943, p. 5. (Italicized in original).

[46] Ibid., p. 5. Blefgen reported that there had been no travel by land through the area that was not carefully checked and there had been no electric storms. There had been a good deal of air traffic though, mostly by American transports of the type that has open portholes "through which passengers could drop lighted cigars. In view of the fact that many Americans habitually smoke cigars, it seems quite probable that they might dispose of them in this manner, not realizing the danger of doing so."

[47] Ibid., pp. 5-6.

[48] A helpful, romantic study of the evolution of aircraft within Ontario's fire protection can be found in Bruce West, *The Firebirds* (Ontario: Ministry of Natural Resources, 1974).

[49] In 1941, Canadian Airway Ltd. responded affirmatively to the department's suggestion that the company's pilots become honorary fire wardens. See, NAC RG 85, vol. 395, file 441-1, vol. 3. A motion was subsequently carried establishing the pilots as honorary wardens, at the one hundred and twenty second session of the NWT Council, 11 February 1941.

[50] NAC, Records of the Special Commissioner, RG 36/7, vol. 4, "Second Report of the Special Commissioner," recommendation no. 15, 28 July 1943, as quoted in Grant, *Sovereignty or Security?*, p. 119.

[51] NAC, RG 85, vol. 1395, file 441-1, vol. 3-A, T. A. Crerar to H. L. Ickes, 27 May 1943.

[52] NAC, RG 85, vol. 1395, file 441-1, vol. 3-A, Dr. C. H. D. Clarke, "Forest Fires and Wild Life in the Mackenzie District 1942", p. 2.

[53] Canadian Forestry Service (CFS), Interview with H. L. Holman, Calgary, Alberta, 10 August 1972. pp. 3-4.

[54] Malcolm Macdonald, "Report on a Visit to North-West Canada and Alaska", 4 September 1942. As quoted in Grant, *Sovereignty or Security?*, p. 264.

[55] NAC, RG 85, vol. 1396, file 441-1-5A, Burnett to Meikle, 14 April 1949.

[56] NAC, RG 39, vol. 463, file 49983, Holman to D. R. Cameron, 25 September 1943.

[57] NAC, RG 39, vol. 464, file 50050, "Forest Fire Protection in the Mackenzie District N. W. T.", 11 November 1944.

[58] Ibid., pp. 24-25.

[59] Ibid., p. 14.

[60] Grant, *Sovereignty or Security?*, passim.

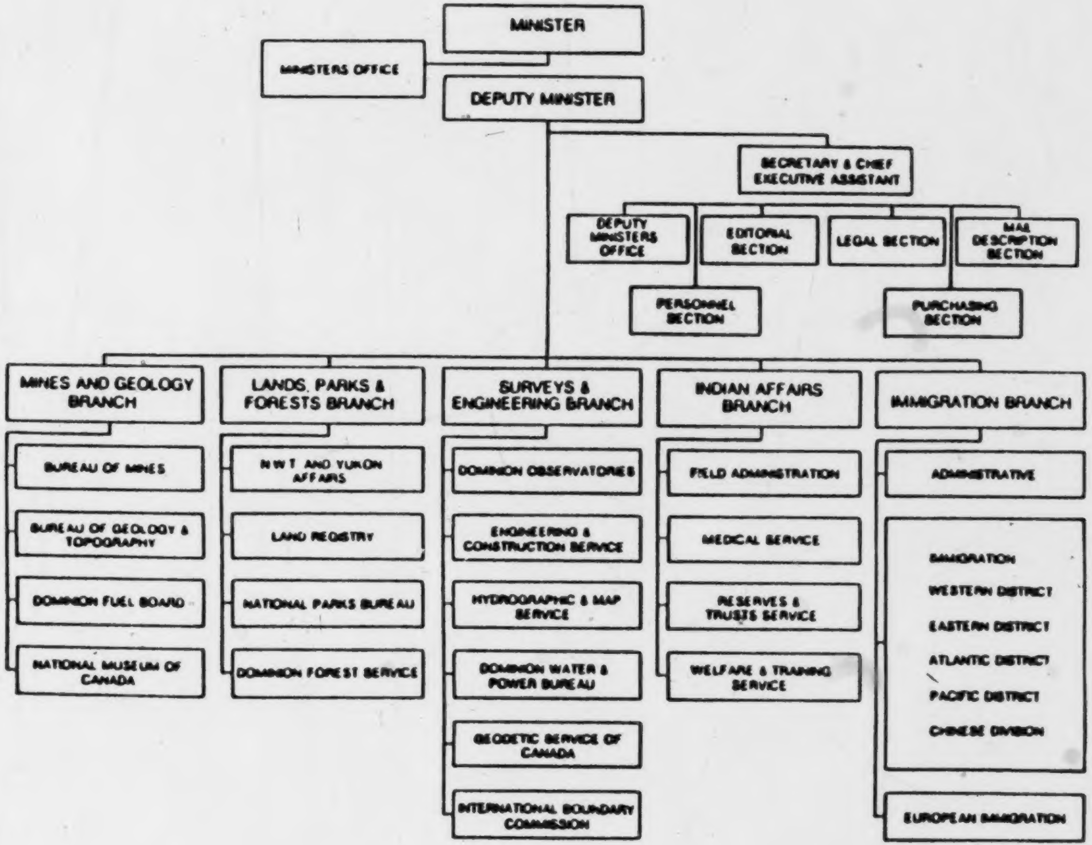
MINISTER
MINISTERS OFFICE
DEPUTY MINISTER
SECRETARY & CHIEF EXECUTIVE ASSISTANT
DEPUTY MINISTERS OFFICE
EDITORIAL SECTION
LEGAL SECTION
MAIL DESCRIPTION SECTION
PERSONNEL SECTION
PURCHASING SECTION
MINES AND GEOLOGY BRANCH
BUREAU OF MINES
BUREAU OF GEOLOGY & TOPOGRAPHY
DOMINION FUEL BOARD
NATIONAL MUSEUM OF CANADA
LANDS, PARKS & FORESTS BRANCH
N.W.T. AND YUKON AFFAIRS
LAND REGISTRY
NATIONAL PARKS BUREAU
DOMINION FOREST SERVICE
SURVEYS & ENGINEERING BRANCH
DOMINION OBSERVATORIES
ENGINEERING & CONSTRUCTION SERVICE
HYDROGRAPHIC & MAP SERVICE
DOMINION WATER & POWER BUREAU
GEODETIC SERVICE OF CANADA
INTERNATIONAL BOUNDARY COMMISSION
INDIAN AFFAIRS BRANCH
FIELD ADMINISTRATION
MEDICAL SERVICE
RESERVES & TRUSTS SERVICE
WELFARE & TRAINING SERVICE
IMMIGRATION BRANCH
ADMINISTRATIVE
IMMIGRATION
WESTERN DISTRICT
EASTERN DISTRICT
ATLANTIC DISTRICT
PACIFIC DISTRICT
CHINESE DIVISION
EUROPEAN IMMIGRATION

Figure 4.1 Organization Chart: Department of Mines and Resources, 1941.
(after S. D. Grant, *Sovereignty or Security?*, p. 25)

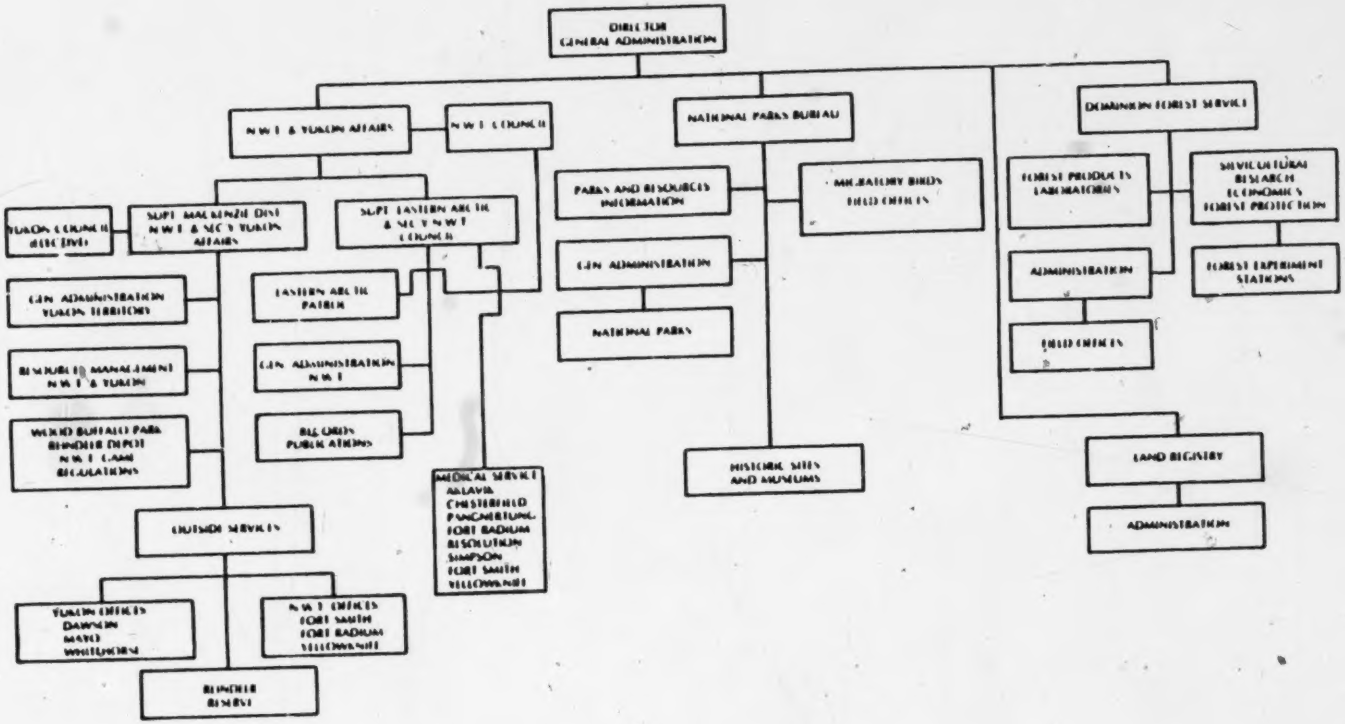
DIRECTOR
GENERAL ADMINISTRATION
N.W.T. & YUKON AFFAIRS
N.W.T. COUNCIL
NATIONAL PARKS BUREAU
DOMINION FOREST SERVICE
YUKON COUNCIL (ELECTIVE)
SUPT. MACKENZIE DIST. N.W.T. & SEC'Y YUKON AFFAIRS
SUPT. EASTERN ARCTIC & SEC'Y N.W.T. COUNCIL
GEN. ADMINISTRATION YUKON TERRITORY
RESOURCES MANAGEMENT N.W.T. & YUKON
WOOD BUFFALO PARK REINDEER DEPOT N.W.T. GAME REGULATIONS
EASTERN ARCTIC PATROL
GEN. ADMINISTRATION N.W.T.
RECORDS PUBLICATIONS
MEDICAL SERVICE
AKLAVIK
CHESTERFIELD
PANGNIRTUNG
FORT RADIUM
RESOLUTION
SIMPSON
FORT SMITH
YELLOWKNIFE
OUTSIDE SERVICES
YUKON OFFICES
DAWSON
MAYO
WHITEHORSE
N.W.T. OFFICES
FORT SMITH
FORT RADIUM
YELLOWKNIFE
REINDEER RESERVE
PARKS AND RESOURCES INFORMATION
GEN. ADMINISTRATION
NATIONAL PARKS
MIGRATORY BIRDS FIELD OFFICES
HISTORIC SITES AND MUSEUMS
FOREST PRODUCTS LABORATORIES
SILVICULTURAL RESEARCH ECONOMICS FOREST PROTECTION
ADMINISTRATION
FOREST EXPERIMENT STATIONS
FIELD OFFICES
LAND REGISTRY
ADMINISTRATION

Figure 4.2 Organization Chart: Lands, Parks, and Forests Branch, 1941-42.
(after S. D. Grant, *Sovereignty or Security?*, p. 26)

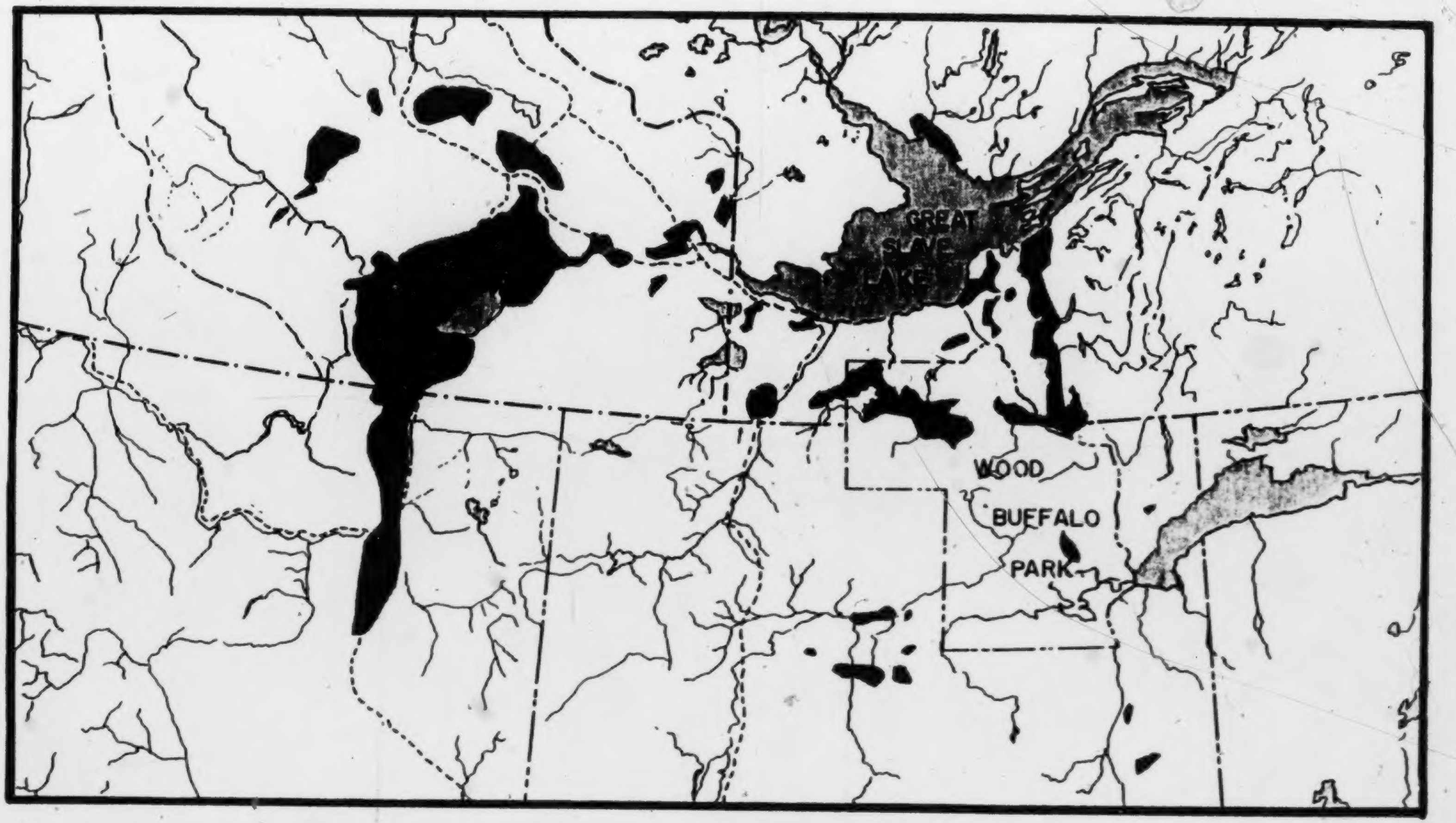
GREAT
SLAVE
LAKE
WOOD
BUFFALO
PARK

Figure 4.3 Some of the 1942-44 fires mapped by H. L. Holman.

(adapted from NAC RG 39, Vol. 464, file 50050, "Report on Forest Fire Protection in the Mackenzie District, N.W.T.," 11 November 1944)

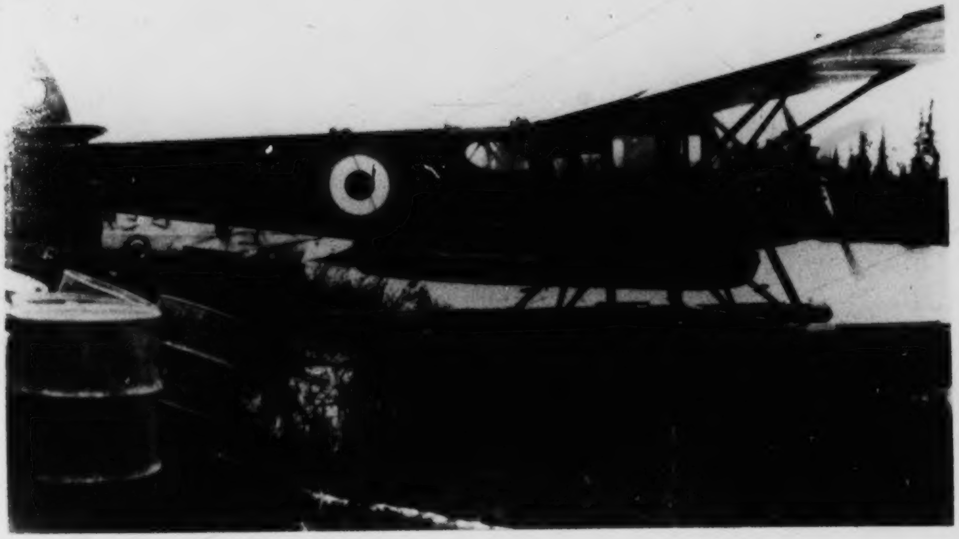

Figure 4.4. Bush plane with canoe slung beneath, N. W. T. , c. 1930; two necessary modes of transportation for northern fire work.

Figure 4.5. Unexpected sources of fire ignition were brought north. Here Dominion Forestry Branch personnel examine remains of tent set on fire by field glasses exposed to sun near Pine Lake, Wood Buffalo National Park, N. W. T. , c. 1928. (NAC, PA-165996)

Figure 4.6. Fire set by river boat personnel near Wrigley Harbour, N. W. T. , September, 1944. (NAC, PA-165984)

CHAPTER 5

Fire Protection and the Search for a Policy, 1950-1987

G is for Game
The Forest's its home.
When the Forest is burned
It has no place to roam.
—Department of Resources and Development,
The A. B. C.'s of Forest Fire Prevention, 1950

I remember flying down the Mackenzie with my boss from Ottawa (it must have been 1956), we were going just past Fort Norman and a goddamn big smoke started coming up on the west side of the Mackenzie River and he looked at that and said: 'What-d'you gonna do with that fire?'
I said, 'I'm gonna take a picture of it.' And that's all we did, that's all we could do. —R. T. Flanagan, Superintendent, MFS, 1988[1]

The postwar re-emergence of organized fire protection in the NWT came with a flurry of federal initiatives aimed at developing the North. Beginning in the 1940s, an increasing interest in the North was evinced by government, scientists, and business.[2] Although the indirect catalyst for all the attention was concern for Canadian sovereignty and security, there were other benefits to be gained by implementing more authoritative policies on the frontier.[3] The demand for fuel and minerals had once again enhanced the North's potential. In turn, resource extraction activity enhanced the value of the North's merchantable timber stands. By 1959 three lumber companies in Wood Buffalo National Park were producing in the order of one and a half million board feet of lumber annually, with mine timber production in the Mackenzie amounting to a half million linear feet.[4] Along with the precious settlements, buildings, and equipment. The rush of fires generated by postwar industrialization combined with a need to protect white man's livelihood to revive Ottawa's conviction that fire protection was necessary on the frontier.

The redirection of federal policy in the postwar era was symbolized by numerous changes in government structure. Federal departments, their branches, names and responsibilities, were shuffled about in repeated attempts to intensify Ottawa's northern presence. In 1950 the Department of Resources and Development was established, taking over from the Department of Mines and Resources. For the first time ever a whole branch of government, the Northern Administration and Lands Branch, became specifically devoted to affairs in the NWT and Yukon Territory. Despite all good intentions, the Branch still found it difficult to create an important niche for northern affairs within the department.[5] So, in 1953 the North was given an entire department—the Department of Northern Affairs and National Resources. Prime Minister Louis St. Laurent explained that the department's name change was indicative of the fact that its centre of gravity was moving north.[6] This shift in Ottawa's focus was expensive as administrative expenditures for the North took off in the 1950s. During the fiscal year ending in 1950, the Department spent approximately $4.5 million, while by 1960 this figure had risen to some $40 million.[7] The simple fact that the North had a department to call its own, one willing to throw money into potential development, makes it clear that during the 1950s Ottawa had decided to play a more permanent role in the North.

I

In the spring of 1946 the Department of Mines and Resources established the Forest and Wildlife Division of the NWT.[8] Harry Holman's thorough and stubborn approach to the establishment of a fire protection organization had finally met with success. Initially the new agency was charged with giving a measure of protection to renewable resources, while drawing up comprehensive management plans for the future. Operating costs for the fire protection component rose swiftly and by 1949 were running well over $100,000.[9] E. G. Oldham, the first Superintendent of the division, treated forestry and wildlife as separate components; even though the two components were closely linked by way of numerous shared employees doing fire related work in summer and game management the rest of the year. At the outset the new agency's primary goal was to preserve game in the unburned forests of the Mackenzie District. The consensus of opinion was that some fifty per cent of the region had been lost to fire from 1940 to 1945.[10] Moreover, it was thought that the serious fire seasons had contributed more to diminishing game populations than hunting and trapping. In Oldham's view the agency's success rested firmly on fire protection. "The most thorough and accurate surveys [wildlife] possible can be completed but if protection is disregarded and uncontrolled, fires sweep the country," which would result in there being left "little to conserve or manage."[11]

Although the Dominion Forest Service was not responsible for the development of the fire operation, it continued to play a critical advisory role. Holman frequently visited the NWT to report on its progress and make recommendations. While in Fort Smith during the spring of 1949, he was impressed with the strides made and the calibre of the organization's men but noted some misdirected effort. Holman was critical of the agency's zeal in fighting remote fires and reminded the men to concentrate their efforts on the most valuable timber areas instead of attempting to control fires in "wasteland." Holman felt that protection policy should focus on the stands of merchantable timber along the Slave, Mackenzie and Liard Rivers.[12] His proposal was at odds with that of men more intimately involved with the situation in the NWT. Holman's fire plans made little reference to the protection of wildlife habitat. But "much of this wildlife is in areas where timber is not classified as merchantable," observed one official, and therefore, "might not be included in the areas to be patrolled under Mr. Holman's plan."[13] Such divergent views on the matter of policy would characterize the next thirty years.

Holman noted improvement in the operation on his return to Fort Smith in 1950, declaring that the "fire suppression set-up here will eventually become as efficient as anywhere."[14] Given that 1950 was the worst fire season since the war, this was a strong compliment. Suppression work in the southern portion of the Mackenzie was beginning to prove itself. The Point Ennuyeuse Fire of 1950 is a case in point. Travelling south for 32 miles in the first day or two, the fire posed an immediate threat to Fort Smith. Aided by a shift in winds from north to south, a suppression crew from Fort Smith was able to secure the southern perimeter while a patrol boat, barge, and tractor were held as back-up near the fire line. For the first time officials appeared to have a fairly well thought out fire strategy in place—a pronounced improvement over 1945 when practically nothing resembling a suppression organization existed. Holman was inspired by good judgement in deciding where and when action would be taken: "It must be realized that in an area as large as this, every fire cannot be fought, for if one attempted to do so fire suppression would mount into astronomical figures."[15]

The organization was tested again in the mid 1950s. A handful of major conflagrations originating south of the NWT converged on Hay River, and the settlements and timber leases along the Slave River. Bursting out of Wood Buffalo Park in 1953, Fire 41 approached Fort Fitzgerald on a twenty mile front and threatened Fort Smith. After the fire stopped just short of the villages, the fire fighting efforts were deemed to have been "an excellent exercise in civil defense." Two years later sixty men were dispatched to fight a conflagration threatening Park timber. The fires were brought under control, but they forced officials to question the relatively weak suppression capability and caused them to initiate discussions with the Alberta Department of Lands and Forests on the matter of jurisdiction along their shared border. In 1956 the first formal cooperative agreement between the NWT and Alberta enabled each respective agency to take action on fires within the other's boundaries.[16]

As forest protection services gradually expanded beyond the Fort Smith region, pressure mounted for the inclusion of areas further afield. As early as 1952 the first in a string of demands for the protection of barren-ground caribou rangeland was considered. The request involved a relatively inaccessible area of about 50,000 square miles in the Lac La Martre area northwest of Yellowknife and was quickly turned down; remoteness, a deficient fire detection system, and excessive cost weighed heavily against its inclusion in the protected area.[17] Later that year the Canadian Wildlife Service asked for special fire protection of the caribou's winter range in the same area.[18] Southern interest groups added their own demands. The Canadian Conservation Association worried about the rising fire potential associated with development activity. At a 1953 meeting in Ottawa, members resolved that a policy should be adopted "to protect the tundra against fires and to preserve it in its natural state."[19] But forestry officials repeatedly reminded the public that protection had to be within the limits of practicality. "All we can hope to do in protecting this northern country," stated Holman, "is offset the effect of human activity, and we may consider ourselves very fortunate if we are able to do that."[20] Hence, efforts were to be undertaken only in areas where human activity centred.

The public's demands and criticisms were often hard felt by local officials. L.A.C.O. Hunt, District Administrator at Fort Smith during the heavy fire years of the early 1950s, sympathized with northerners dismayed when local fires were left uncontrolled because fire fighting resources were tied up elsewhere. He cited lost trapping areas as posing a serious economic threat and hoped that future funding increases would lead to "fairly large scale coverage," or, he asked rhetorically, "are we to continue the present meagre policy which does very little in any case to protect the forests from destruction?"[21] Outside of directives stipulating that action be taken on fires threatening settlements and Park timber leases, forest fires were to be fought where deemed feasible and worthwhile. What Hunt wanted was a clear cut policy upon which better fire plans could made, but the search for more specific guidelines continued throughout the 1950s.

In spite of the administrative problems, the agency did make sound progress operationally. A suppression crew was kept on call at Fort Smith. Land and water transportation capabilities were improved. Large quantities of fire fighting equipment were cached, reconnaissance aircraft were chartered to help with detection, float planes were used to move men and supplies, and helicopters began to play a role. In 1951 a comprehensive forest protection ordinance was completed, giving forest officers sweeping powers, including permission to arrest without warrant.[22] Statistics and publicity—two bellwethers of a sound fire program—were also given due consideration. A summary of the inaugural 1946 season, for example, reported that 58 fires had burned a total area of 1,452,487 acres.[23] Annual statistics helped illustrate the fire problem for officials in Ottawa and were combined with short reports on weather, equipment supplies, aircraft use, prevention programs, and expenditures.

A large component of the fire program was devoted to prevention and education. In 1950 a broad publicity offensive began. Hundreds of letters were sent to mining companies, sawmill operators, and business organizations explaining forest protection and prevention. Residents and visitors to the Mackenzie District were asked to co-operate with the agency in the detection and suppression of fires, while church authorities and teachers were implored to help in the fight against fires by "teaching lessons of good citizenship."[24] Educational films on forest conservation with titles like "Tomorrow's Timber," "Temagami Ranger," and "Forest Commandos," were shown throughout the NWT. Fire wardens stationed in the various districts gave lectures on the subject, fire prevention signs were posted, and ads carried by newspapers and commercial radio networks repeatedly warned the public about the dangers of fire. The effects of the prevention blitz were evident as early as 1952 when officials proudly reported only nine convictions for infractions of fire laws.[25]

By the end of the decade the fire protection section centred at Fort Smith had become known as the Mackenzie Forest Service (MFS). In late 1959, R. T. Flanagan, MFS Superintendent since 1955, symbolically renamed the organization to recognize the fact that they "weren't just a handful of people running around with posters and shovels."[26] In fact, MFS personnel, when not busy with fire duties, spent much of their time administering wildlife and lumbering concerns in Wood Buffalo National Park. Although the search for a formal fire policy continued, the Park—with its timber supplies, buffalo, and whooping crane nesting grounds—had undoubtedly become the primary concern. Between 1950 and 1960, over $1 million was spent building all-weather roads in the Park, enhancing both the viability of timber operations and their protection from fire.[27]

In 1959 Flanagan formulated the first comprehensive fire plan for the Mackenzie District. Entitled "Forests for the Future," the scheme was greatly influenced by Prime Minister Diefenbaker's 1958 nationalist "vision" of northern development, the "Roads to Resources" program, and the renewed public interest in resource conservation. Much of the plan described how fire protection would match the predicted increases in industrial activity.[28] Enshrining the then traditional approach of protected and non-protected areas, it called for coverage to broadly parallel developments in transportation while offering limited protection to the vast back country (Figure 5.1). In short, protection remained localized to settlements, transportation corridors, and commercial timber operations within a national park.

But Flanagan's plan also recognized that the MFS would have to give more inclusive protection in the 1960s. Realizing that forests in the NWT had value beyond their commercial potential, Flanagan felt that preparations should be made to "protect as much of the forest cover as possible in order to ensure maximum fur-bearing habitat area."[29] Flanagan warned his superiors in Ottawa about the adverse consequences stemming from burnt-over caribou range and trapping habitat, but he stopped short of suggesting blanket coverage:

> Because of the high costs of attempting to build our forestry organization up to the point where it could cope with most tree-line and tundra fires, we do not recommend such expansion. But we point out the problem, suggest that we take control action

> whenever possible, and bring the whole matter to your attention because it puts the frontier of our activities far beyond the obvious which forest inventories would suggest.[30]

As the 1960s opened, the MFS and district administrators were aware that fire control in the NWT would have to involve more than just the traditional protection of resources held dear by southerners. In extending security to the livelihood of developers, conservationists, and lumbering interests, the government was also forced to recognize the value of the forest to its inhabitants.

II

By the early 1960s the MFS had equipped itself with the trappings of its provincial counterparts. An organized pool of Indian fire fighters existed, a reasonable communications system was in place, detection towers and buildings were constructed, training programs established, and heavy equipment—including aircraft with water drop capabilities—were increasingly employed. The MFS now had access to a range of alternative fire control techniques. As a member of Canada's Associate Committee on Forest Fire Protection, it had annual contact with experts from across the country. As a consequence, the NWT's less advanced fire control strategies were quickly modernized. Typical of the general upgrading was an emphasis on initial attack techniques. By the late 1950s fire fighting crews were flying in the wake of lightning storms, detecting and extinguishing fires before they became a problem. Backfiring was also increasingly used on large, distant fires.

The technical expertise of federal foresters was also applied to MFS activities in the early 1960s. That much of the early research lay outside the realm of fire protection, emphasized the fact that Ottawa still justified fire control costs by the North's timber potential: timber inventories carried out since the 1950s continued northward; white spruce characteristics were studied; outbreaks of spruce budworm were monitored; and in 1961 an arboretum was established at Fort Smith.[31] Focusing squarely on commercial forestry, these projects underlined the interest the North's merchantable timber resources attracted. Fire did merit some scientific attention. After repeated requests by the MFS, federal foresters were sent to Fort Smith in 1961 to draw up a fire danger index. Published in 1962, the forest fire danger tables for the region provided a numerical expression for the possibility of fires occurring, and gave a projection of fire behaviour for those that did.[32] Knowledge of localized fire danger was imperative to the MFS, whose small pre-suppression force had to be spread over a huge area.

Advances made in the ability to deal with more remote, lightning-caused fires created a whole host of new policy options and problems. In the space of a few years, aircraft had allowed the MFS to access a large portion of the district. In doing so, fire protection now entailed more than simply offsetting the effects of human activity, and protecting amenities. Although many of the logistical problems of mounting distant fire control efforts remained, so too did man's urge to put fires out.[33]

As the feasibility of fighting remote fires rose in the 1960s, so too did the cost. Heavy fire seasons in 1961, 1964, and 1966, pushed annual fire control expenditures up around $500,000.[34] While certainly expensive, the ability to suppress back country lightning fires made it undeniably seductive. In 1966 the MFS took action on 182 fires within a protected area of some 135,00 square miles.[35] This represented almost 25 per cent of the district's land base, an enormous area. Indicative of the protected area's constant growth was the inclusion of the barren-ground caribou winter range in 1965. Pressed by the unrelenting demands of the Committee for the Preservation of Caribou, the

MFS, with funds from the Treasury Board in Ottawa, extended the protection capability to a 43,000 square mile strip south of Fort Reliance and east of Fort Smith (now known as the Caribou Range).[36] Of course there were limits to what the MFS could do and, more importantly, spend. After 1966, department officials in Ottawa began expressing concern that the MFS was protecting "certain areas of little or no value."[37] And so in the fall of 1966 the MFS was asked to classify all district lands by their potential cash value, with the hope of more effectively allocating fire control expenditures.

Input from this assessment helped create the first formal fire control policy in 1967. Based on the old concept of protected and non-protected areas, the new policy prioritized zones within the protected area by resource values. Timber, recreation, watersheds, and wildlife habitat figured into the new policy, but life and property remained the highest priorities.[38] By the end of the 1960s it became clear that the NWT could not base its fire protection efforts on traditional (southern) forestry concerns. Like elsewhere, settlements and merchantable timber were offered protection, but to an increasing degree forestry officials had to consider critical trapping habitat, wildlife rangeland, and recreational areas. More than any other fire program in Canada, the MFS had to deal with the complexities of protecting multiple-use forest values. The breathtaking growth in fire fighting capabilities had inadvertently taken the agency into new fire frontiers and complicated the formulation of policy. Constantly redefined and reevaluated, the search for a policy was now beginning to reflect broader cultural and political changes in the NWT.

In 1966 the Department of Indian Affairs and Northern Development (DIAND) was created, replacing the Department of Northern Affairs and National Resources. By 1967 administration over the NWT began to devolve from the Northern Affairs branch in Ottawa to the Government of the

Northwest Territories (GNWT) based in Yellowknife. The natural resource components, with the exception of game management, remained DIAND's responsibility and were left in Fort Smith. Consequently, the fire program was virtually untouched by the reorganization. It was practical to leave the operation's centre in Fort Smith, as it was already established and well connected with the Ottawa head office. This was crucial. Access to Treasury Board authorities was a priority since they had become decisive in keeping a lid on fire protection expenditures. In a sense, Treasury officials were adjunctive policy makers in that they held the MFS liaison officers in Ottawa strictly accountable. The only substantial change in MFS jurisdiction began in 1964, when Parks Canada began to assume administrative responsibility for Wood Buffalo National Park, and that process was completed with the transfer of fire duties in 1968. MFS resources continued to be called upon to protect critical park values, like whooping crane nesting grounds and buffalo rangeland, but the distraction of running the park had ended.

Historians have often likened Ottawa's administration of the North to a form of colonialism, meaning external administration over the territory by "foreign" officials in Ottawa who were not directly linked to the area except by their government's power.[39] Fire protection was one of the best examples of this relationship whereby Ottawa officials directed matters of local concern. In the early postwar period, the decision-making process had been left largely in the hands of local officials working in conjunction with federal foresters. Unlike the 1950s, a high turnover rate of senior NWT staff in the 1960s and early 1970s prevented the local perspective from having much influence on policy. Moreover, the growth of the NWT organization and its mandate in the 1960s had taken policy formulation out of its proper context--the forests of the Mackenzie. To an increasing degree, those most responsible for guiding fire protection policy sat in air conditioned offices thousands of miles away, increasingly detached from fire activity and the voices and needs of NWT residents.

The fire seasons of 1968 and 1971 set the stage for a further re-examination of policy. Although 1968 was not an exceptional season, one particularly noteworthy fire raced towards the settlement of Inuvik in early August. At the time, officials described Fire 34 as "probably the most serious ever experienced in the Mackenzie District, in that it presented a very real and serious threat to a major community."[40] Large military aircraft stood by in the event of an evacuation as 400 men successfully fought the 87,000 acre conflagration. Fire 34 exemplified the NWT's unique and diverse fire environment. R. E. Schmidt of the MFS put fire conditions at Inuvik in perspective by saying that: "Until someone devised a hazard rating which used the comparative and superlative of extreme like 'extremer' and 'extremest,' there would be no real description of what the unrelieved midnight sun could do to the forest fuels at those high latitudes."[41] Having never before mounted an intensive suppression effort of this kind, the MFS benefitted from the experience.

The 1971 season, on the other hand, was a complete disaster. Fire costs swelled to five million dollars as 322 fires burned an estimated 2.3 million acres and almost razed the town of Pine Point[42]. Tragically, the loss involved much more than forests and money. Two men were killed on the fireline by falling snags; another four died the following week in an aircraft accident. Circling a downed helicopter in the dense smoke at Fire 6, two Canso water bombers collided head-on, killing all four crew members; the pilot of the helicopter survived.[43] A journalist visiting the central fire office at Fort Smith was stunned by the logistical problems confronting MFS personnel:

> The huge wall map of the Northwest Territories bristled with coloured pins—bright red for active fires, yellow for suspected but unconfirmed fires, black, appropriately, for burned out fires. I counted 263 of the red and yellow pins, and new ones were being added. On the wall next to the maps were charts which indicated falling humidity and the nearly total absence of water in the environment . . . . The fire control officer had bigger problems than supply and demand. He explained that when the electrical storms scattered the fires across his district in such numbers he had cannibalized the Yellowknife Fire District on the north side of Great Slave Lake. Now, that zone had its own outbreak of serious fires. One had cut the Mackenzie Highway, Yellowknife's only land link to the outside world, and knocked out power from the town's hydroelectric plant on the Stagg River. The territorial capital was getting by with emergency power from a diesel generator.[44]

The 1971 season and the criticism that followed overwhelmed the MFS. Treasury Board officials in Ottawa were astounded by the cost of protecting what they considered useless forest. They went so far as to send analysts north to get a first-hand look at the destruction.[45] Northerners, of course, had a much different view. The destruction of valuable wildlife habitat angered many NWT inhabitants who felt that areas valued by industrial society had received the bulk of protection. For the first time, local trapping interests took their complaints directly to Ottawa and Prime Minister Pierre Trudeau.[46] Pressure from both the government and the increasingly politicized public initiated yet another round of policy evaluation in the mid 1970s.

That northerners were beginning to express such strong concern about fire policy had significant implications for the future. Certainly the most notable trend in the North during the 1970s was the rising dissatisfaction of its native people. The emergence of a younger educated generation and vocal interest groups slowly began to have an impact on policy formulation. The most profound influence in terms of fire protection came from the Hunters and Trappers Councils. Established in the late 1960s, the Councils received growing support from their respective communities and the territorial government. In the 1970s federal officials suddenly found themselves confronted with a host of demands from groups committed to having their rights with respect to wildlife and fire management recognized.[47]

Another influence on policy was born out of more intensive research into the complex relationship between fire and the northern ecosystem. During the early 1970s the range of projects and research parties involved was astounding. For instance, in the spring of 1973 a meeting held to better co-ordinate the work that year was attended by representatives of no less than six different agencies and universities.[48] Perhaps the most significant fire research was carried out by the Arctic Land Use Research Program (ALUR). Although the bulk of the data generated by ALUR studies had few apparent practical applications, it contributed to a greater appreciation of the environmental impact of fire, and the possible impact of fire control technology. More importantly, the research reflected a general redirection of effort by fire agencies working in the North and elsewhere. Fire control organizations were becoming technocracies. More precise meteorological measurements, advances in aircraft support, and an improved understanding of fire behaviour, had all come about as a result of scientific work, and were increasingly taken advantage of by fire protection officers in the NWT.

III

Political fallout from the 1971 fire debacle generated an extensive reorganization of the fire program in the mid 1970s. Bolstered by the addition of a policy adviser, head office staff in Ottawa drafted a new fire protection policy for the MFS—by then renamed the Northwest Lands and Forest Service

(NLFS). Implemented in 1973, and revised throughout the decade, the new policy's stated objective for fire management was "to reduce forest fire damages to a level consistent with the present and future needs of the people to ensure the continuation of their enjoyment and use of the resources."[49] To that end, the NLFS added specialized staff and continued with a program developed in the late 1960s that saw a handful of forest officers sent to the Forest Technology School (FTS) in Hinton, Alberta, to learn the most modern fire control techniques. In addition, the NLFS reinstated basic spring training for its fire fighters, hired a fleet of contracted aircraft, enhanced their initial attack capabilities, and made progress on a 1100 mile VHF communications system.

The new policy divided the area into four zones and defined fire control objectives for each on the basis of priority. Put simply, priority zones 1 and 2 encompassed settlements and industrial amenities—such as mines, tourist lodges, merchantable timber, and highways—while the majority of important wildlife and trapping areas were to be assigned to zone 3, with zone 4 including all other lands.[50] "In remote areas, where protection of life and property is not required, the general aim will be to limit fire damage to a level believed to have existed for thousands of years."[51] This was an innovative but complex policy and officials in Ottawa immediately recognized its drawbacks. A 1973 memo from H. B. Robinson, Deputy Minister of Indian and Northern Affairs, to the Treasury Board, laid bare the basic weakness:

> It is important to recognize that some well known trapping areas could not be included in Priority Zones 1, 2 or 3. The other major weakness of the existing policy relates to the possibility of some fires in Zone 4 burning into Zones 1, 2, or 3 prior to being actioned. Hopefully by 1974, an extension of the protected area and additional funds . . . will enable us to eliminate these problems.[52]

Robinson's words were prophetic. The funding increases never materialized and policy "wavered," in the words of one NFLS employee, "from 'fight all fires' to fight 'as few fires as possible.' "[53]

By 1976 annual fire control costs had gone over three million dollars and Ottawa was directing the NFLS to stop taking any action on fires in zone 3 unless settlements were threatened. By 1977 the zone had officially been abandoned.[54] In effect, the protected area once again encompassed only traditional values: communities and areas adjacent to major watercourses. Large areas, in particular those used for trapping and hunting, were left unprotected.[55] Head office personnel in Ottawa knew this would be an unpopular move and expected "protests as smoke and the number of abandoned wildfires materialize."[56] On cue the Northwest Territories government, its fish and game branch, local trapping councils, and native associations, demanded that protection be reinstated in zone 3 areas and argued for the inclusion of important and previously overlooked game habitats.

Such demands were increasingly difficult to ignore. The political activism and influence of native northerners reached dramatic heights in the mid 1970s. Justice Thomas Berger's Mackenzie Valley Pipeline Inquiry from 1974 to 1977, and the concomitant rise of native self-determination symbolized by the "Dene Declaration" of 1975, radically altered the balance of power in the region. A native majority became established in the Legislative Assembly of the NWT. Natives still comprised the bulk of the NWT's population and resource policies could no longer be successfully implemented without their input. Berger's 1977 report eloquently dispelled southern Canada's traditional notion that the North was simply a development frontier, and gave life to the native people's growing conviction that the region was their political and cultural homeland.[57] Berger's inquiry was a landmark event not only because it postponed the pipeline. The inquiry's methodology was in itself important. Berger took the decision-making process to the people of the NWT. His local hearings created a "solidarity among them, and a divisiveness between native and non-native . . . that might never otherwise have come about."[58]

In this new political environment, the federal government's long search for an adequate fire protection policy broke down completely. The fires of 1979 recapitulated the problems of the two previous decades, and precipitated loud and prolonged protests from native interest groups who felt that too much had burned. The 1979 season was tremendous by any standard; 380 fires burned almost five million acres. Hardest hit was the south Mackenzie region. The Fort Smith District alone absorbed half the fires and over two thirds of the total area burned. The fires devastated forests, trapping and hunting, not to overlook the NLFS, and Ottawa's resolve to control the fire program, but they also transformed and regenerated. All fire programs benefit from a busy season and the NLFS was no exception. Events following the conflagrations of 1979 established the NWT as a model for fire programs that depend on the integration of multiple-use wilderness areas into a protection scheme. The NWT became the first region in North America to offer its inhabitants an active role in policy formation.

The first outbreak of fires in 1979 began after a mid-June lightning storm. Only those fires in the first two priority zones received control efforts. By the end of the month the Fort Smith District was taking action on ten large fires and had almost exhausted fire fighting resources. July opened with heavy smoke blanketing the southern portion of the District, grounding air operations and reducing fire detection capabilities. A startling example of how smoke could limit the effectiveness of a fire control organization was provided by two fires that began during the first week of July in the Slave River Valley north of Bell Rock—the fires were 8,000 acres upon discovery, too big to control but impossible to ignore. At the time, NLFS staff decided against actioning large fires in any zone unless they threatened lives or property. With the pattern set, a seemingly endless array of large, expensive, and destructive fires, rolled across the southern forests of the NWT. By summer's end, the Native Council of Canada had organized its own crew and fought a fire not being actioned by the Forest Service. In addition, the Hunters and Trappers Association (HTA) had met with Jake Epp, Minister of Indian Affairs and Northern Development, to complain about the fire situation and call for an inquiry, while the mining community of Pine Point had been threatened. With these developments the NLFS had become completely fatigued.[59]

Ottawa responded to the vociferous complaints of northerners by appointing an independent Ministerial Fire Review Panel on November 1, 1979.[60] Focusing on the Fort Smith region, the panel was to "assess the efficiency of operations, adherence to fire policy, and the adequacy of information dissemination," while reviewing fire management policy in the NWT as a whole. Fashioned after the Berger Pipeline Inquiry, the panel held a series of meetings throughout the western NWT, and coordinated various research projects into the influence of fire on wildlife habitat, and its socioeconomic implications.[61] Only five months later, in the spring of 1980, the review panel presented its report. It deemed the 1979 season "particularly hazardous," and a "difficult challenge even to a more mature and better equipped organization."[62] With the report came 96 recommendations. Besides suggesting that the complex priority zone system be scrapped in favor of a simplified policy delineating attack zones and observation zones, the panel emphasized the need for comprehensive detection, a stronger initial attack capability, and better planning for extreme seasons. More important than operational reforms, however, was the panel's suggestion that the public be brought into the policy-making process. They saw an overriding need for a "fire management plan based on the needs of the people and involving them in its preparation."[63] The following year, meetings were held with the Dene Nation, the Metis Association, the HTA, the GNWT and their Department of Renewable Resources, and several northern communities, to discuss the panel's recommendations and the formation of local committees to advise the government on fire management policy.

Increasing public involvement was an admirable sentiment, but not altogether practical. A case in point was offered by the Fire Management Committee set up in 1981 to advise on policy matters. An evaluation of the committee's first year found it unproductive, overtly critical, and not at all representative of the NWT's important land users.[64] This was not surprising. Native activism, especially on the part of the influential Dene group, had made it impossible for the federal government-whose representatives chaired the Committee to build a fire management policy by consensus. With the issue of land claims looming, northern natives had become extremely wary of any initiative made by Ottawa. Put simply, the Dene viewed the policy-making process as a sham and wanted nothing less than complete control of the fire program. In their own words, Dene control of the budget and program "would achieve what they them selves (sic) want and eliminate the need for a conglomeration of organizations determining the priorities and objectives for the people and their land."[65] With federal authorities in charge, the Dene would be happy with nothing but a policy geared towards complete fire exclusion.[66]

It was in this dissentient era that the federal government designed its final fire policy. Implemented in 1983 and improved upon seasonally, the policy put to work many of the recommendations made by the 1979 Review Panel. The overall concept was simplified to incorporate a "Fire Action Zone" (FAZ) and the "Observation Zone" (OBZ). The FAZ amounted to approximately twenty percent of the total area below the tree line and was determined in consultation with local interest groups (Figure 5.2). The cornerstone of the new policy was its emphasis on aggressive initial attack on all fires within the FAZ, and a commitment to analyze all escaped fires in conjunction with affected communities to determine an applicable level of suppression.[67]

The policy, however, also noted the impossibility of complete protection under certain conditions and implied that fire management should allow for, and "incorporate the role of fire in the northern environment." Although a guiding principle and not a component of the policy's objective, this was a critical point. Fire exclusion in the NWT was simply impossible; fire conditions would, at some point in time, become too severe. Moreover, the new fire management program implicitly supported the maintenance of fire's natural role in the northern boreal forest. Unless the NWT's historical fire regime—a combination of frequent light surface fires and the odd intense conflagration—was maintained, the forest ecosystem would be altered immeasurably. Ironically, fire management was suddenly faced with the tricky task of dispelling the notion (much vaunted by the fire organization since its conception) that forest fires were exclusively detrimental. The public had to be made aware that man influences the forest environment as much through successful fire exclusion as he does through increased fire activity.

Fire research in the 1980s augmented the new policy. Cooperative projects carried out in the NWT by staff at the regional office in Fort Smith (now called the Territorial Forest Fire Centre) and the Canadian Forest Service (CFS) had strong practical applications. The 1982 Porter Lake Project allowed Fire Centre experts and CFS researchers to document experimental fires burning in typical black spruce-lichen woodlands under various conditions.[68] The experimental fires yielded a better understanding of fire behavior in the NWT—even a wildfire that escaped from the project helped support the data collected and became an excellent case study for students of fire behavior.[69] Perhaps the most important research-driven component of the fire program was an advanced pre-suppression strategy unveiled in 1986. It provided NWT "fire managers with a procedure, based on potential fire behavior (current and forecasted), to systematically build-up or build-down initial attack resources."[70] Although this philosophy was shared by all modern fire agencies, and borrowed from them, it was an approach developed specifically for the diverse nature of the NWT's fire environment. No longer were strategies employed elsewhere simply refitted for use in the North. Lightning location recorders, sophisticated meteorological equipment, computerized technology, and staff well acquainted with fire in the northern environment, enabled the Territorial Forest Fire Centre to better organize its relatively limited resources.

While federal officials busied themselves with the details of the new fire policy, the GNWT initiated the transfer of the entire fire program to their control. Although only the start of a general trend toward the devolution of all resource management to the GNWT, the transfer could not have come at more opportune time. The 1979 season had embittered northerners to the federal program to a degree that would have made its traditional structure unworkable. Moreover, the devolution of fire protection responsibilities would not simply quell the hostility of northerners, it would also relieve a few headaches in Ottawa. Besides getting rid of the obvious logistical complications of controlling a fire program thousands of miles away, federal officials would hardly miss the animosity kindled by the fires of 1979.

The transfer was a practical solution. The fire program would receive greater public support after devolution (the Dene and Metis supported the transfer), and future policy changes would more likely be tailored to local demands. The Hon. C. M. Drury's 1980 report on constitutional development in the Northwest Territories (the "Drury Report") implied as much in recommending that the GNWT assume greater responsibility for its forests. In doing so, Drury felt that the GNWT would have to "become accountable to the territorial residents for its own performance and expenditure in this field."[71] The complex devolution process began in earnest during 1985 and became effective on April 1, 1987. The historic role of the federal government as keeper of the NWT's forests was over. It now remained to be seen if a purely regional program would be able to solve the enduring problems posed by fire in the NWT.

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[1] Interview, R. T. Flanagan, October, 1988.

[2] See for instance, the government's first broad outline of the North's physical environment, *The Canadian Arctic* (Ottawa: Department of Mines and Technical Surveys, 1951). An important compilation of scholarly articles on the North was undertaken by the Canadian Social Science Research Council in 1944, see D. A. Dawson (ed.), *The New Northwest* (Toronto: University of Toronto Press, 1947). A contemporary and rather romantic business plan for the North was put forward by R. A. Davies, *Arctic Eldorado* (Toronto: Ryerson Press, 1944).

[3] Discussions of Ottawa's rationale for asserting itself in the North in the postwar era can be found in David Judd, "Canada's Northern Policy: Retrospect and Prospect," in W. C. Wonders, ed., *Canada's Changing North* (Toronto: McClelland and Stewart, 1971), pp. 338-350. An interesting historical perspective on Canada's reaction to American wartime development in the North is J. L. Granatstein, "A Northern Foreign Policy," in E. J. Dosman, ed., *The Arctic in Question* (Toronto: King's College Circle, 1979), pp. 13-34; see also Grant, *Sovereignty or Security?*

[4] R. T. Flanagan, "A History of the Department of Northern Affairs and National Resources," (n.p., 1963), p. 63. An excellent contemporary discussion of the North's forest resources and government policy is provided by Flanagan, "The Forests of Northern Canada," in William C.

Wonders (ed.), *Canada's Changing North* (Toronto: McClelland and Stewart, 1971), pp. 219-224. The best source for commercial operations in the Park is Potyondi, "Dual Allegiance," passim.

[5] The standard work on the extremely convoluted structure of the North's administrative history remains K. J. Rea, *The Political Economy of the Canadian North* (Toronto: The University of Toronto Press, 1968); Rea suggests that prior to 1954 the federal government regarded the administration of the North in much the same way as they regarded the administration of the National Museum, see p. 47.

[6] House of Commons, *Debates*, 8 December 1953, p. 696.

[7] Expenditure figures taken from annual reports of the Department of Resources and Development, and Department of Northern Affairs and National Resources, respectively.

[8] It is impossible to be sure of the exact title of the new agency. In official correspondence it was variously referred to as "Forests and Game," "Forests and Wildlife," "The Forest and Wildlife Service," and "Conservation and Management Services." The civil servant's confusion regarding nomenclature is certainly understandable in this era and is a reflection of the complex nature of the government's evolution in the North.

[9] NAC, RG 85, vol. 1396, file 441-1, part 5A, "Report: Forest Fire Statistics, Northwest Territories, 1948-1949," p. 1.

[10] Ibid., Richards to Cumming, 10 September 1946.

[11] Ibid., "Extracts from the Minutes of the One Hundred and Seventy-ninth Session of the Northwest Territories Council held on February 18, 1948."

[12] Ibid., E. E. Burnett to Meikle, 14 April 1949.

[13] Ibid., Meikle to Gibson, 19 April 1949.

[14] Ibid., Holman to Gibson, 27 July 1950.

[15] Ibid.

[16] The original cooperative agreement with Alberta was revised again in 1972. The NWT made a similar agreement with British Columbia in 1966.

[17] The matter of fire protection for the Lac La Martre caribou range was put to Holman for consideration, see NAC, RG 85, Vol. 1497, file 441-1, part 8, Holman to Cunningham, 10 October 1952.

[18] D. Kiil, "Fire Protection—Caribou and Reindeer Ranges," 12 February 1973, p. 1.

[19] NAC, RG 22, vol. 290, file 60-9-1, part 1, L. Lemieux [Canadian Conservation Association] to H. A. Young, 14 August 1953.

[20] NAC, RG 85, vol. 1497, file 441-1, part 8, Holman to Cunningham, 10 October 1952.

[21] NAC, RG 85, vol. 1497, file 441-1, part 9, Hunt to Young, 17 August 1953. Also see Hunt's reply to a letter from the Yellowknife Fish and Game Association asking for better fire protection, *News of the North*, 20 May 1955. For a colourful description of LACO Hunt's career in the North, see his autobiography, *Rebels, Rascals and Royalty* (Yellowknife: Outcrop Ltd., 1983).

[22] The 1951 ordinance was formally promulgated in 1956, see Northwest Territories, "Forest Protection Ordinance," Chapter 38, *Revised Ordinances of the Northwest Territories, 1956*.

[23] Maintaining a statistical record was a noteworthy step for the agency to make even though the early fire data was of questionable value. At the time, the fire detection and suppression systems were drastically out of balance. The cooperation of aircraft pilots in reporting fires enabled detection to far outstrip control. Consequently, fire statistics could not be used as a criterion for fire control efficiency in the 1950s or 1960s. The more fires that were detected and reported, the smaller the percentage of those actually suppressed.

[24] NAC, RG 85, vol. 1396, file 441-1, part 5A, Gibson to F. Fraser, 16 May 1949.

[25] NAC, RG 85, vol. 1497, file 441-1, part 8, "1952 Summary of Forest Fire Losses, Costs and Causes, Mackenzie District including Wood Buffalo Park," p. 2.

[26] Personal interview with Rory Flanagan, 21 October 1988.

[27] J. G. McConnell, "The Fort Smith Area, 1780-1961; an Historical Geography" (unpublished M. A. Thesis, University of Toronto, 1966), p. 126.

[28] For a summary of Diefenbaker's "vision" and its political context, see P. C. Newman, *Renegade in Power* (Toronto: McClelland and Stewart, 1964). The culmination of Diefenbaker's call for a national conference on conservation in 1958 was the "Resources for Tomorrow" Conference held in

Montreal in the fall of 1961, see *Resources for Tomorrow: Conference Background Papers* , 4 vols. (Ottawa: Queen's Printer, 1961-62).

[29] R. T. Flanagan, "Forests for the Future: Mackenzie District, Wood Buffalo National Park," 9 January 1959, p. 2.

[30] Ibid., p. 2.

[31] For information on inventories see, W. L. Wallace, *Compendium of Forest Surveys: Yukon and Northwest Territories, 1949-69* (Canada: Forest Management Institute, 1970); these surveys and commercial operations within Wood Buffalo National Park gave rise to optimistic articles on the potential of NWT timber; see for example, K. W. Horton, "Big Timber in the Far North," *Timber of Canada* (December 1958). Northern white spruce studies were carried out in the late 1950s by W. W. Jeffreys; see for example, "A Prairie to Forest Succession in Wood Buffalo Park, Alberta," *Ecology* , 42, 1961, pp. 442-444. Little information exists about the arboretum, which was apparently given up at some point during the 1960s.

[32] A. D. Kiil and J. S. Mactavish, *Forest Fire Danger Tables* (Ottawa: Forest Research Branch, 1962).

[33] Man's unconscious urge to extinguish fire is rather impossible to gauge but has probably played some part in the evolution of wildfire control. A strange but compelling examination of this idea is put forward by Sigmund Freud, "The Acquisition and Control of Fire," in *Collected Papers*, vol. 5, (London, 1950), p. 228.

[34] Associate Committee on Forest Fire Protection, "Exchange of Information, Northwest Territories" (1967), Appendix XIII, p. 3.

[35] Ibid., pp. 1-2.

[36] D. Kiil, "Fire Protection—Caribou and Reindeer Ranges" (12 February 1973), p. 1. In 1969 fire protection was also extended to the 20,000 square mile Reindeer Range east of Inuvik.

[37] Department of Indian and Northern Affairs, file R-1315-0, vol. 16, "Forest Fire Protection: Assessment of Protected Areas," (November 1966), p. 1.

[38] Northern Natural Resources and Environment Branch, *Fire Management in the Yukon Territory and Northwest Territories* (Ottawa: Department of Indian Affairs and Northern Development, [revised ed.]1974), pp. 1-3.

[39] A forthright example of this argument can be found in K. Coates, *Canada's Colonies* (Toronto: James Lorimer& Company Publishers, 1985); also see Gurston Dacks, *A Choice of Futures: Politics in the Canadian North* (Toronto: Methuen Publications, 1981), pp. 208-211.

[40] DIAND, file R1315-1, vol. 1, D. H. Wellstead to J. K. Naysmith, 12 September 1968.

[41] R. E. Schmidt, "Fifteen Years of Philosophical Examination on Fire and Weather," *Proceedings of the First Western Region Fire Weather Committee: Scientific and Technical Seminar*, ed. M. E. Alexander (1983 rpt; Edmonton: Canadian Forest Service, 1985),p. 2.

[42] Canada Department of Labour, "Accident Summary Report for the Mackenzie Forest Service of the Department of Indian and Northern Development" (December, 1971), p. 4.

[43] Stephen Hume, "In a Cleansing Fury," in *Ghost Camps* (Edmonton: NeWest Publishers, 1989), pp. 154-155. Hume provides a gripping account of the 1971 season in an excellent essay devoted to the legacy of fire in Canada.

[44] Ibid., p. 154.

[45] Personal interview with A. D. Kiil, 30 March 1989.

[46] DIAND, file R1315-1, vol. 1, (telex) Delegates 1971 Delta Trappers Conference to P. E. Trudeau, (n.d.). In response to the concerns of the Delta trappers, H. B. Robinson, Deputy Minister of Indian Affairs, told them to "expect that valuable trapping habitats will in future years receive such protection as necessary to safeguard their sustained activity." (file R1315-1, vol. 1, H. B. Robinson to T. Butters, 20 October 1971). The file contains correspondence from a number of concerned local organizations and individuals.

[47] Jonquil Graves, "A History of Wildlife Management in the Northwest Territories" (n.p., 1988), pp. 157-185, passim.

[48] DIAND, file N-6215-0, vol. 1, D. E. Reid, "Fire Research Meeting Notes, April 25, 1973," pp. 1-6.

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[49] DIAND, *Fire Management in the Yukon Territory and Northwest Territories: Policy Manual*, rev. ed. (Northern Natural Resources and Environment Branch, 1974), p. 4.

[50] This is a simplified version of the policy as described in Department of Indian Affairs and Northern Development, *Forest Fire Management in the Northwest Territories* (Ottawa: Supply and Services, 1980), p. v-vi.

[51] John McQueen, "N. W. T. Priority Zones for Forest Fire Protection," *Fire Ecology in Resource Management: Workshop Proceedings*, ed. D. E. Dube (Edmonton: Canadian Forestry Service, 1978), p. 97.

[52] DIAND, file #N-6215-0, H. B. Robinson to A. Kroeger, 18 May 1973, p. 2.

[53] R. E. Schmidt, "Fifteen Years," p. 4.

[54] DIAND, file#N-6215-0, vol. 2, W. Allmand to S. M. Hodgson, 31 December 1976, p. 2. The total costs for 1976 and 1977 were given as $3,062,383 and $3,545,000, respectively (the latter figure is approximate).

[55] DIAND, John McQueen and George Tuccaro, "Fire Management in the N. W. T. : New Directions for the 1980s" (November, 1980), p. 2.

[56] DIAND, J. P. G. deLestard, "Fire Management Policy, Objectives and Operations—N. W. T. —1976," 23 January 1976.

[57] See Thomas R. Berger, *Northern Frontier, Northern Homeland: Report of the Mackenzie Valley Pipeline Inquiry* , 2 vols. (Ottawa:Supply and Services, 1977).

[58] Gurston Dacks, *A Choice of Futures*, p. 99, see also pp. 136-148, passim.

[59] All details pertaining to the 1979 season can be found in Department of Indian Affairs and Northern Development, *Forest Fire Management in the Northwest Territories* (Ottawa: Supply and Services, 1980), passim.

[60] The Panel members were: Peter J. Murphy (Chairman), the Associate Dean of Forestry, Professor and Chairman of the Department of Forest Science at the University of Alberta; Stanley R. Hughes, a forest fire management consultant in British Columbia, and former head of forest protection in the Alberta Forest Service; and John S. Mactavish, an environmental management consultant in Nova Scotia, and former Deputy Minister of Lands and Forests in Nova Scotia.

[61] Ibid., p. v. The reports contracted by the Forest Fire Review Panel are listed on p. 121.

[62] Ibid., p. viii.

[63] Ibid., p. viii.

[64] John S. Mactavish, "Northwest Territories Fire Management Program Committee: An Evaluation" (DIAND, n.p., 1981), pp. 21-22.

[65] These views were expressed by the Dene in, "An Overview of the 1979-80 Review into the Forest Fire Situation in the NWT"(u.p., October, 1980), p. 16. The report was received by DIAND's Hon. Minister John Munro from Chief Jim Antoine at Fort Good Hope on 26 July 1980.

[66] Ibid., p. 12.

[67] For a full explanation of the policy see, *Fire Management Policy* (Ottawa: Northern Affairs Program, rev., 1987); also see, R. Bailey, "Managing Large Fires in the Northwest Territories," in D. E. Dube, comp., *Proceedings of the Intermountain Fire Council 1983 Fire Management Workshop* (Edmonton: Northern Forest Research Centre, 1985), pp. 41-43.

[68] M. E.. Alexander, B. J. Stocks, and B. D. Lawson, "Fire behavior in black spruce-lichen woodland: the Porter Lake Project," Information Report (Edmonton: Northern Forestry Centre, u.p.), pp. iii-a—iii-b;, also see M. E. Alexander and R. A. Lanoville, "Predicting Fire Behavior in the Black Spruce-Lichen Woodland Fuel type of Western and Northern Canada," [poster and text] (Edmonton: Northern Forestry Centre, 1989).

[69] Another relevant case study of fire behavior is M. E. Alexander, and R. A. Lanoville, "Wildfires as a Source of Fire Behavior Data: A Case Study from Northwest Territories, Canada," *Ninth Conference on Fire and Forest Meteorology, April 21-24, 1987, San Diego California* , rpt., (Boston: American Meteorological Society, n.d.), pp. 86-93.

[70] R. A. Lanoville, "Development of a Preparedness System for Forest Fire Initial Attack in the Northwest Territories," *Proceedings of the Third Western Region Fire weather Committee Scientific*

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and Technical Seminar, Study NOR-5-O5, ed. M. E. Alexander (Edmonton: Northern Forestry Centre, 1986), p. 8.

[71] C. M. Drury, *Constitutional Development in the Northwest Territories: Report of the Special Representative* (Ottawa: Supply and Services, 1980), p. 98; also see pages 44, 69, and 74-79.

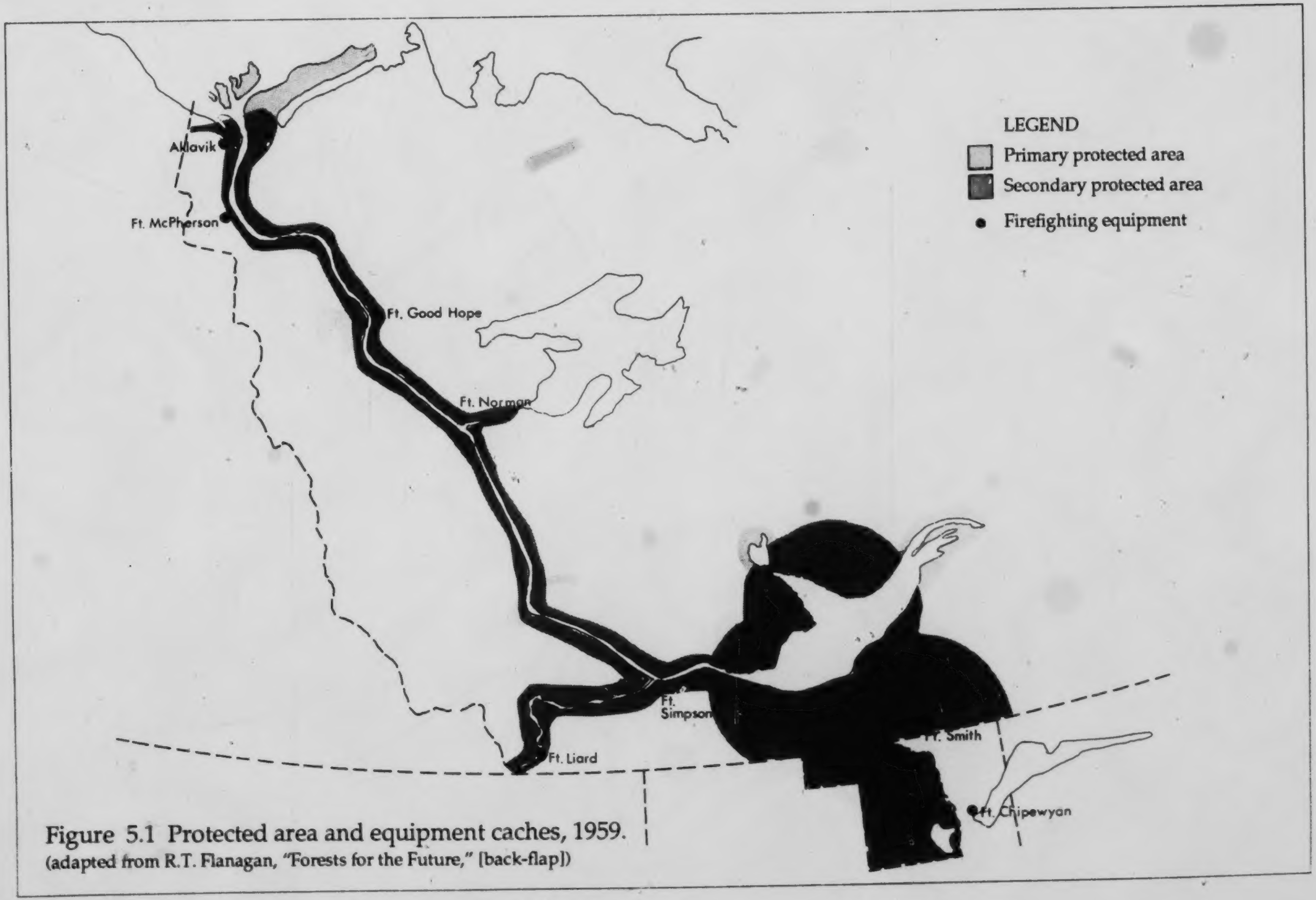

LEGEND
▢ Primary protected area
■ Secondary protected area
● Firefighting equipment
Aklavik
Ft. McPherson
Ft. Good Hope
Ft. Norman
Ft. Simpson
Ft. Liard
Ft. Smith
Ft. Chipewyan

Figure 5.1 Protected area and equipment caches, 1959.
(adapted from R.T. Flanagan, "Forests for the Future," [back-flap])

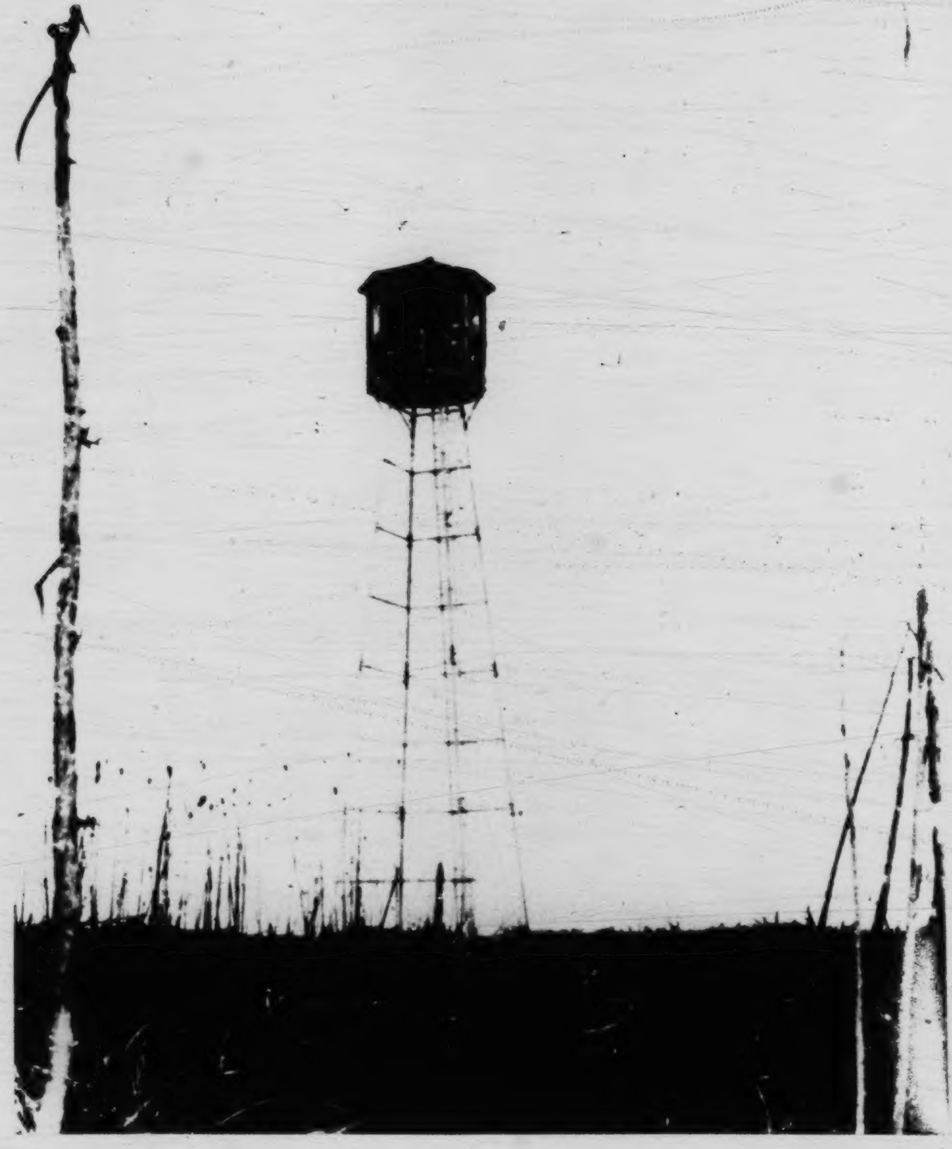


Figure 5.2. Caribou Mountains fire tower, Wood Buffalo National Park, 1955.
(NAC, PA-165995)

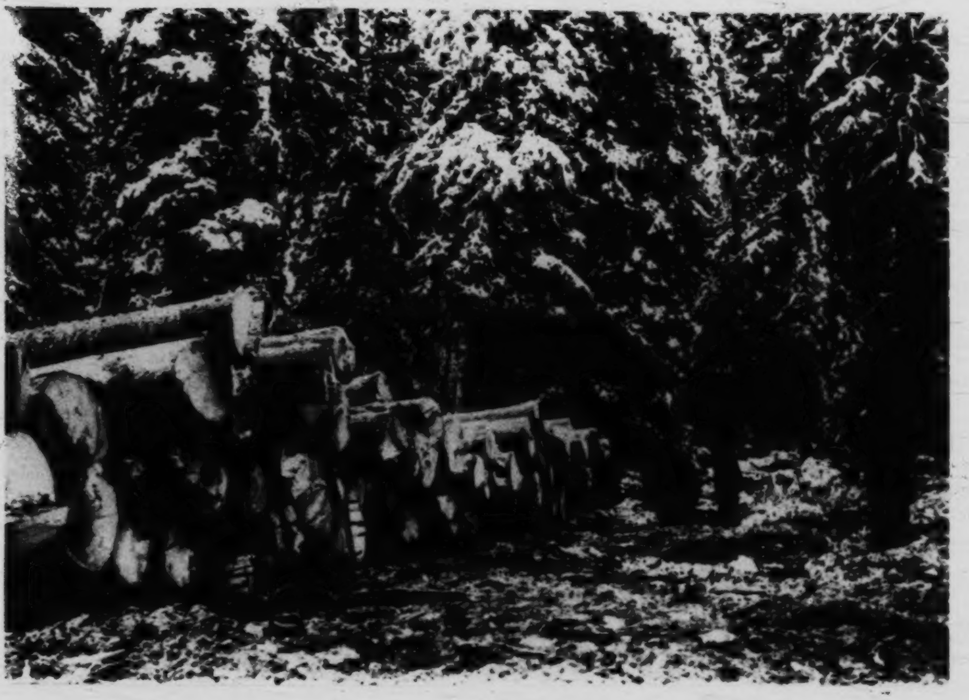


Figure 5.3. Deck of white spruce logs on timber berth near the Peace River in Wood Buffalo National Park, 1961. (NAC, PA-165991)

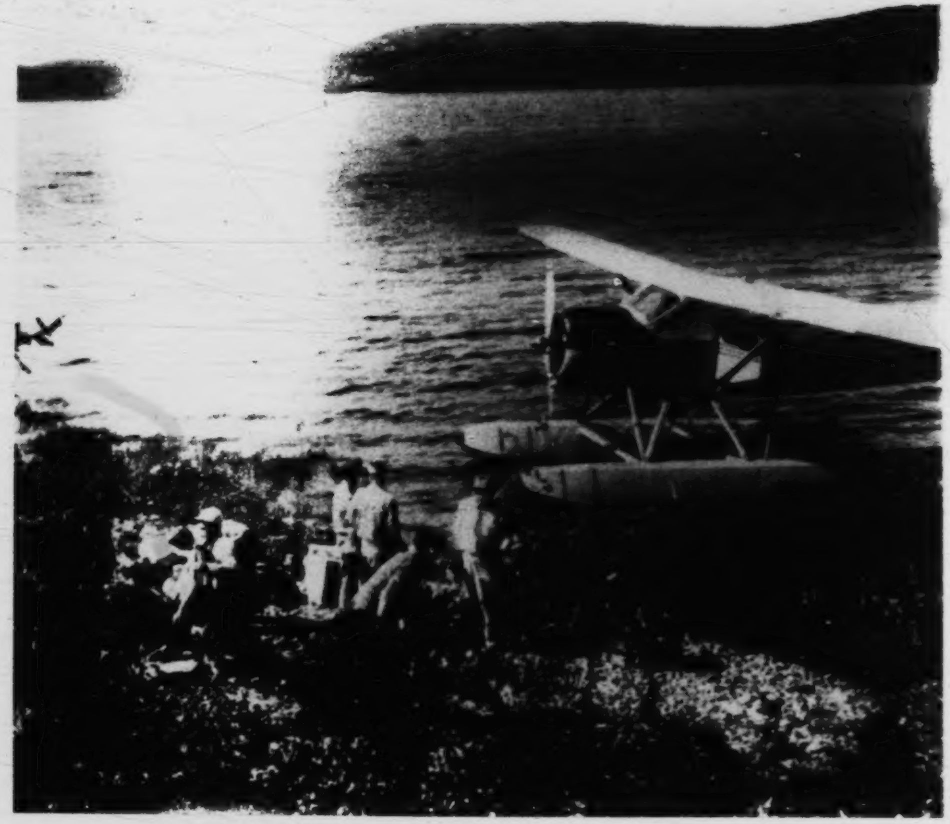


Figure 5.5. Making camp near fire line, Siltaza Lake (Snowdrift River), N. W. T. , July 1962. (NAC, PA-165988)

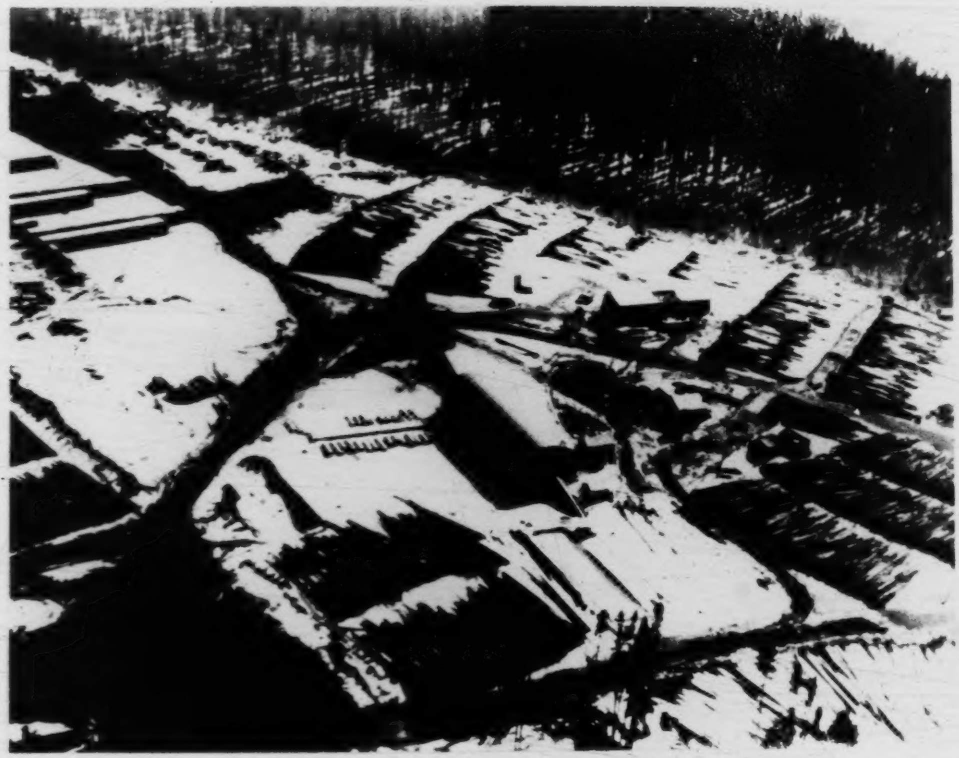


Figure 5.4. Swanson Lumber Company sawmill on the Peace River, Wood Buffalo National Park, 1961. (NAC, PA-165991)

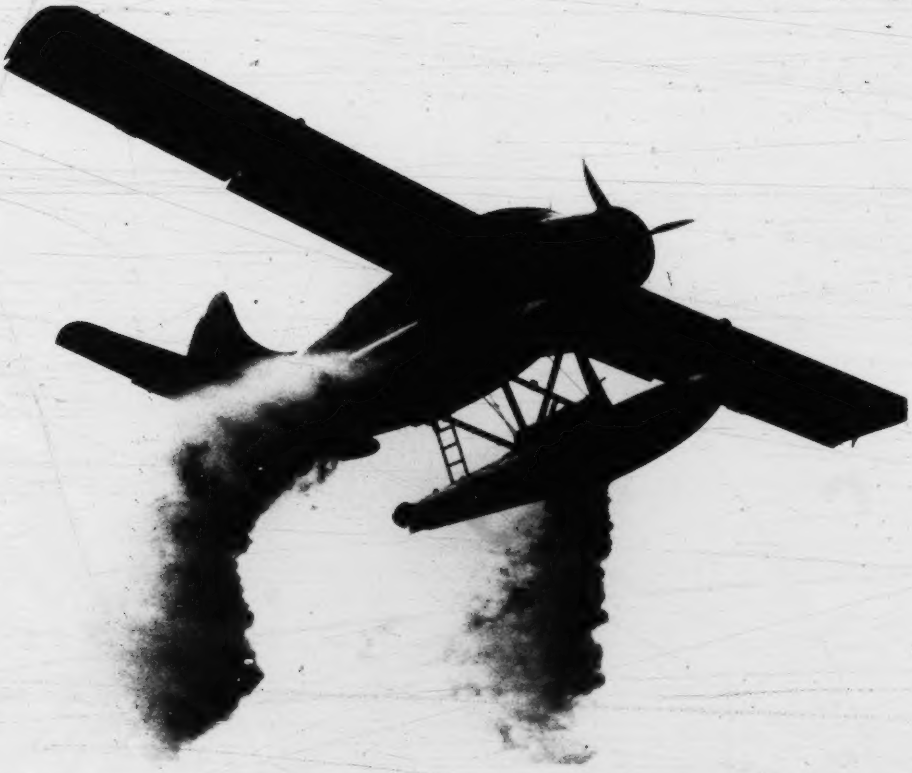
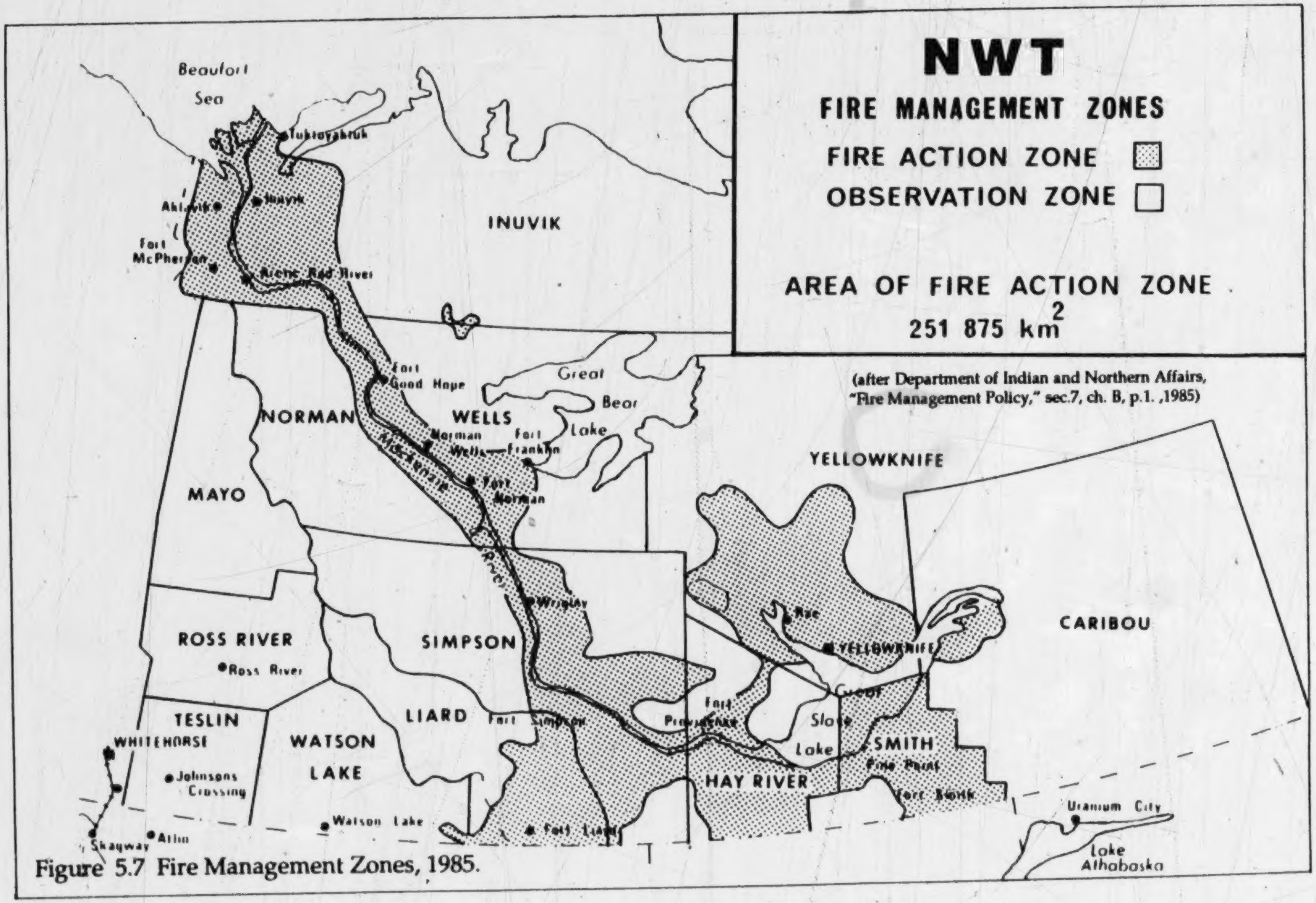


Figure 5.6. One of the first water-bombers used in the N. W. T. ; an Otter fitted with spill tanks, c. 1961.


NWT
FIRE MANAGEMENT ZONES
FIRE ACTION ZONE ▨
OBSERVATION ZONE ☐
AREA OF FIRE ACTION ZONE
251 875 km²
Beaufort Sea
Tuktoyaktuk
Inuvik
Aklavik
Fort McPherson
Arctic Red River
INUVIK
Fort Good Hope
NORMAN
WELLS
Norman Wells
Fort Franklin
Great Bear Lake
Fort Norman
Mackenzie
River
MAYO
Wrigley
YELLOWKNIFE
Rae
YELLOWKNIFE
CARIBOU
ROSS RIVER
Ross River
SIMPSON
TESLIN
WHITEHORSE
Johnsons Crossing
WATSON LAKE
LIARD
Fort Simpson
Fort Providence
Slave Lake
SMITH
Pine Point
Fort Smith
HAY RIVER
Watson Lake
Fort Liard
Atlin
Skagway
Uranium City
Lake Athabaska

(after Department of Indian and Northern Affairs, "Fire Management Policy," sec.7, ch. B, p.1. ,1985)

Figure 5.7 Fire Management Zones, 1985.

EPILOGUE

> Hunting and trapping areas adjacent to native settlements have . . . become more critical in terms of fire effects since the native has adopted the fixed settlement idea of the white man.
> —H. W. Gray, Superintendent, NLFS, NWT, 1975[1]

The historical record reveals an expressive relationship between the federal government and the NWT's boreal environment. Ottawa's stewardship of the region's forestland was a role it took rather seriously. This was particularly evident in the the postwar era. Moreover, the evolution of fire programs and policies in the North provides an excellent example of the government's attempt to exercise a civilizing force in one of Canada's most remote regions. As we have seen, this was a difficult, expensive, and at times, unsuccessful undertaking. Although much of the previous discussion has focused on the gradual development of fire operations, administration, and policy, it is important to emphasize the overarching theme of man's complex and dynamic interaction with the boreal ecosystem, a story well reflected by the NWT's fire history.

The federal government certainly precipitated the most sweeping changes in the relationship between fire and man in the Canadian North. This point is probably best clarified by the historical circle completed when native northerners demanded fire exclusion in the late 1970s. Only fifty years earlier, the bulk of the federal government's protection work involved trying to convince inhabitants of the same region to give up traditional fire practices in the hope of preventing fires. Within half a century, Ottawa's fire traditional perception of fire. Of course, there were influences besides fire protection at work—the most significant was the increasing rate of settlement which did away with the nomadism of native northerners, and left them more dependent on the forest resources close at hand. No longer could hunting communities simply move after a fire had swept through their lands: they were settled. As a consequence, there grew a more pressing need for the protection of habitat in areas surrounding communities and the structural values at risk, lest they be completely destroyed by fire. Like most North Americans, inhabitants of the NWT had come to view fire as both unwanted and unnecessary.

Today, the protection of resources traditionally valued by the NWT's citizens remains a legitimate concern, and one that fire managers must continue to address. Equally pressing, however, is the need to re-educate the public about the beneficial role fire has played, and will continue to play, in the northern environment. As the trend in fire policy throughout North America moves closer to accepting, allowing, and in some cases, prescribing the burning of forestlands, the public's belief in former policy objectives must be altered. The nagging quest for an acceptable fire policy (described in the last chapter) was in many ways a result of the unrealistic expectations northerners had attained over previous decades. To a large degree this was simply a matter of poor communication. The transfer of the fire program to the GNWT in 1987 has given fire managers a new opportunity to address and inform society's concerns regarding fire. That opportunity must not go to waste. The NWT's latest fire program has not yet been tested by a fire season like 1979, but there is little reason to expect that the next round of severe conflagrations will be calmly accepted by the public as "nature's way." Though the federal government's direct involvement with fire protection in the NWT ended in 1987, the lingering effects of that involvement will remain for years.

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[1] H. W. Gray, "Wildfire in the North," *Proceedings of the 1975 Annual Meeting of the Western Forest Fire Committee* (Portland: Western Forestry and Conservation Association, n.d.), p. 11.

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